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LUDWIG'S ANGINA*

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Ludwig's angina, acute infectious submaxillary angina, or diffuse suppuration of the floor of the mouth are some of the names given to a septic, necrotic, gangrenous process involving tissues beneath the tongue and mouth.

Notice was first attracted to this condition in 1836 by Ludwig of Stuttgart who called it "gangrenous induration of the neck," describing an inflammation of the cellular tissues beginning around the submaxillary gland with invasion of the neck and the floor of the mouth. He summarized its characteristics as an insignificant inflammation of the throat which soon subsided, with a supervening peculiar wooden hardness of the cellular tissues, a hard swelling under the tongue, a well defined border of hard edema in the neck, and the absence of disease of the glands despite the involvement of the surrounding tissue. Immediately an active controversy arose as to whether or not this is, as Ludwig claimed, a distinct entity, or merely a phase of cervical suppuration. The most noteworthy discussion of the subject was in the French Surgical Society in 1892—Nelaton and Delorme taking opposite views—the former denying it a place as a distinct disease, whereas Delorme supported the views of Ludwig. As late as the present year Ashhurst in presenting a report of 18 cases of Ludwig's angina treated at the Episcopal Hospital of Philadelphia from 1905 until 1929, seems to have felt it necessary to again emphasize the fact that Ludwig's angina is a true clinical entity. He stated that the condition is an acute inflammatory process involving the cellular tissues of the floor of the mouth and of the submaxillary region of one or both sides of the neck—a true cellulitis to be distinguished from lymphangitis and lymphadentitis, but that the lymph nodes might become involved secondarily. He also calls attention to the fact that lymphadentitis and lymphangitis always arises from surface lesions in the skin or mucous membrane, whereas cellulitis is due to infection arising in the cellular tissues themselves and spreading by direct continuity instead of by the lymphatics. T. Turner Thomas in 1908, proved by anatomical studies that connective tissue in the submaxillary fossa is directly continuous with the floor of the mouth, and that in Ludwig's angina the spread is along the planes of connective tissue.

Regardless of one's views as to the etiology, a fairly constant picture presents itself. The patient suddenly becomes septic, has a moderate elevation of temperature, rigors, mental depression, and distressing respirations. The tissue between the body of the lower jaw and hyoid rapidly becomes swollen, tense, tender and edematous, the tongue is pushed up against the roof of the mouth and cannot be protruded, there is dribbling of saliva, and the breath soon becomes peculiarly foul.

Due to the rapid necrosis of the deep tissues, especially the larynx, the prognosis is grave; not from the toxemia, but in most cases from acute edema of the glottis with sudden death, or in the more prolonged cases from septic pneumonia. The mortality ranges around 50 percent. Thomas collected 106 cases with death in 43, and Da Costa reports 4 cases with 2 recoveries; but in Ashhurst's review of the series previously mentioned there were 5 deaths in 18 cases. My experience with this condition is limited to two cases. One case treated several years ago, and whose history is not available, was operated upon and died from acute edema of the glottis soon after return to his room. A short abstract of a more recent case illustrating most of the points brought out will follow.

TREATMENT

The futility of conservative treatment

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is self evident, and radical procedure is always indicated. An incision is made below the body of the lower jaw—on both sides if necessary— and the deep structures are penetrated by the Hilton method, traversing the submaxillary space, passing behind the body of the mandible, and then penetrating the floor of the mouth or ending just beneath its mucous membrane. Rubber tube drainage is established. This may be supplemented by a submental incision in the midline passing behind the symphysis. Hot, moist dressings, supportive treatment, and possibly a croup tent with moist medicated air are indicated. It is essential that one be prepared to do a quick tracheotomy from the time the patient is taken in charge until forty-eight or seventy hours following the operation, and especially is this true during and immediately subsequent to the operation.

CASE REPORT

Case No. 15145—Oklahoma Hospital, Tulsa, male, 17 years of age with a history of having had the second right molar tooth extracted two days before admission, following which he developed a temperature of 100.5 degrees, pulse 88, general malaise, pain and swelling in the right submaxillary region, but history was negative for chills, rigor, sweating, etc. Previous medical and family histories were irrelevant. On examination it was found that the second right lower molar had been removed and from its cavity exuded a thin, yellow, purulent exudate, together with marked gingivitis. From the inferior border of the right mandible downward to just above the clavicle, and from the angle of the jaw to near its symphysis on the right, was a hard, indurated, boardlike tumefaction, most marked and most tender over the submaxillary fossa. There was no appreciable increase in local temperature, and no discoloration, fluctuation nor pulsation. The sublingual tissue was edematous, pushing the tongue upward and backward toward the pharynx. Dribbling of saliva was constant, breath fetid, and patient could not close the mouth nor protrude the tongue. Respiration was labored, facies apprehensive, and there was marked hoarseness. Under nitrous oxide anesthesia a 4 cm. transverse incision was made below the inferior border of the mandible down through the deep fascia, and passing behind the mandible the fibres of the myo-hyoid muscle were separated and the submucosal region of the floor of the mouth entered by finger dissection, evacuating a great amount of black exudate. Rubber tube drain was inserted through the cervical wound upward to just below the mucous membrane. The musculature was greyish black, edematous, and infiltrated with a black hemorrhagic exudate. During operation patient ceased breathing but was resuscitated after some anxious moments. Laboratory report: "streptococci and staphylococci." Two days following operation temperature reached 102 degrees after which it rapidly returned to normal, and the patient was discharged on the seventh postoperative day with a small discharging sinus.

SUMMARY

1. Ludwig's angina is a true clinical entity.

2. The process extends by continuity and via the planes of connective tissue.

3. Lymphangitis and lymphadentitis when present are secondary manifestations.

4. The clinical picture is fairly constant.

5. Conservative treatment is futile.

6. The mortality rate will be lowered if proper radical treatment is instituted upon establishing the diagnosis, and if an armamentarium is readily available for quick tracheotomy if the occasion demands it.

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PRIMARY REPAIR OF THE CERVIX UTERI LACERATED IN LABOR

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Most all lacerations of the cervix result from childbirth and most all parturient cervices are lacerated. The only immediate condition of consequence caused by cervical laceration is hemorrhage, which fortunately is rarely so copious in amount as to be serious. The later pathological conditions include eversion of the mucous membrane (ectropion), hypertrophy of the

lips, erosion and cyst formation of the Nabothian glands. Ectropion and erosion predispose to irritation and inflammation of the cervical glands with resulting leukorrhea. The hypertrophy of the lips which is usually associated with the ectropion and erosion increases the weight of the uterus and some degree of prolapse is commonly present. The patient so afflicted as the result of her labor or labors, complaining of a sense of weight and pelvic pressure, backache, leukorrhea and possibly sterility and reflex nervous manifestations, is a familiar type. Of more serious import is the fact, as stated by Graves, that "cancer usually originates in one of these lacerated, everted cervices."

Acceptance of the above statements as correct, I am convinced that they cannot be successfully contradicted, imposes the obligation on the obstetrician that he make every efort to prevent cervical laceration and that he repair it when it does occur. I shall not discuss means of preventing tears of the cervix but the treatment of them.

I have had no experience with the secondary repair on the fifth or sixth day as advised by Hirst or on the tenth day as practiced by Coffey. De Lee states that his experience with the secondary suture has been unsatisfactory. Capillary oozing is always troublesome and the tissues are brittle and stiff. Furthermore, it would seem to be asking a good deal of the patient to submit to an operation requiring an anaesthetic during her puerperium. Where deliveries are made in the home, it seems to me that unless severe hemorrhage occurs, which we suspect originates in a lacerated cervix, it is best not to make an effort to examine the cervix following delivery. The difficulty of maintaining a rigid aseptic technique and getting a good exposure in a good light militates against examination of the cervix immediately post partum under these circumstances. This was my practice until the establishment of a delivery room about four years ago at Albert Pike Hospital. Here, with the patient on a suitable table, with proper exposure and light and where a rigid aseptic technique is maintained, I have exposed the cervix of every patient I have delivered there. He who has not inspected the cervix post partum will be greatly surprised at its appearance. Potter says it looks like a plowed field, adding that the cervix following his method of delivery by version is in better condition as a rule than that following spontaneous delivery.

The following is the technique I have used. At the completion of the second stage of labor under gas-oxygen or ether anaesthesia, pituitrin 0.5 to 1 cc. is given. As soon as the placenta has been delivered, a weighted speculum is placed in the vagina and one or two pliable specula are used by the assisting nurse to retract the lateral walls of the vagina. The cervix is grasped with sponge forceps, which are preferable to vulsella because they do not traumatize the tissues. If there is evidence of chronic cystic infection and hypertrophy of the endocervix, such tissue is removed with a sharp curette or scissors. Tags of muscle or mucous membrane, if present, are cut off and the one or more lacerations sutured with chromic catgut. A continuous locked stitch is used, penetrating to, but not through the endocervical mucosa.

In this comparatively small series of cases, there has been no infection and the results have been satisfactory. Examination has been made in about 75 percent of the cases four to six weks later and the condition of the cervices has been found to be such as to warrant me in continuing the practice of primary repair.

TREATMENT OF COMPOUND FRACTURES*

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The wounds of compound fractures can be roughly divided into two groups, those produced from within out and those from within in.

Wounds produced from without in are more apt to be contaminated, and the damage to the various tissues is greater than those produced from within out.

Consequently there is greater possibility of infection following such a wound.

No standard type of treatment can be used for the wounds of all compound fractures.

The indications for treatment of compound fractures are reduction of the fragments with as little trauma as possible,

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removal of contaminated and devitalized tissue, the elimination of dead space and the prevention of infection spreading into the wound from the surface.

In the simpler types, cleansing of the skin, sterile dressing, and immobilization is sufficient. In those with more severe wounds, the above condition can be brought about best by immediate reduction of the fracture, thorough cleansing and cautious debridement of the wound, obliteration of dead space by means of traction and prevention of surface infection by Carrel Dakin treatment.

In those cases in which infection has been prevented and in which it has been possible to cover the bone with soft parts, union at times takes place as in simple fractures.

In fractures compounded from within, the wounds are usually small and made by a spicule of bone penetrating the skin; those compounded from without are usually caused by some crushing or penetrating force which is carried to the bone.

In the first type a sterile dressing is placed over the wound and the skin is cleansed with gasoline for a distance of 12 inches, shaved, painted with 6 percent picric acid in alcohol, and covered with sterile dressings. After this the case may be treated as a simple fracture.

In cases of the second type the injury to the vascular structure may be so great as to demand immediate amputation but in those in which the vessels escape injury other treatment is usually possible, except in the lower extremity where sometimes an artificial foot would be more servicable than the wreck of a foot left.

Inoculation with antitetanus serum is wise in all cases. It is necessary first to combat shock by hypodermic injections of morphine, the application of heat by means of hot water bottles and blankets, and the administration of stimulants such as hot coffee and of fluids and glucose by the Murphy drip.

As soon as it can be done safely an anesthetic is administered, and the limb examined and cleansed.

In the more extensive wounds no attempt at primary suture is made. The wound is examined for the removal of foreign bodies, loose, non-viable tags of muscle, and fascia.

Loose and comminuted fragments of bone should not be removed unless they are practically extruded from the wound and completely separated from all sources of blood supply.

The extensive removal of these fragments is a very frequent cause of non-union. Drains of rubber tubing may be inserted and irrigation continued every three hours. If properly splinted with splints of the Thomas pattern, the wound will heal well. After two weeks of adequate drainage and irrigation secondary suture is possible in a fair number of cases.

Whenever possible the wounds are enlarged to take advantage of gravity drainage. When this is possible, pockets of discharge are prevented by constant irrigation or the use of ordinary suction apparatus.

Adequate and early splinting tends to lessen shock, prevent further injury, limit sepsis and secure comfort. It has for its objects (1) proper alignment, (2) recovery of the original length of limb, (3) immobilization of the joints above and below the fracture, and (4) easy access to the wounds.

Splints depend for their efficiency on the principle of extension. In the hospital the Thomas splint may be supplemented by the use of the Balkan frame and Hodgin's splint.

The chief causes of non-union are, first, gaps due to loss of substance of the bones from the early removal of the comminuted fragments; and second, faulty apposition due to the interposition of muscle or fascial structures.

Comminution increases callus formation and the probability of union.

Under aseptic conditions bones not properly approximated may be brought into line by splinting with extension, the removal of intervening tissue, and fixation with heavy kangaroo tendon inserted through drill holes in the fragments.

Fixation of fragments in septic fractures by steel plates or bands has in my hands proved harmful.

The non-union resulting from failure to remove fibrous tissue separating bone-ends is best treated with an autogenous bone-graft approximately a year after all sinuses have healed.

Plaster of paris splinting must be maintained for three months before healing

can be expected. Failures are usually due to sepsis, poor approximation or faulty splinting. After perfect healing a prolonged course of massage should be employed to hasten recovery of function.

Neglect to follow up these cases is responsible in large measure for the long periods of disability.

Grimault states that every complicated fracture disinfected sufficiently to permit complete primary suture is amenable to treatment by osteosynthesis if this is necessary.

If drainage or incomplete suture is indicated because of doubt regarding the surgical disinfection, or to hold temporary reduction, delayed osteosynthesis may be done after from eight to fifteen days.

In infected fractures osteosynthesis should be done only when reduction and union is impossible by other methods.

When there is a choice of methods, metallic fixation and periosteal detachment should be restricted as the last resort.

When the fracture has consolidated it is not necessary to remove the metal unless a fistula develops or there is redness of the skin or sharp pain on pressure.

When a complicated fracture treated by excision, osteosynthesis and primary suture becomes healed by primary intention without any local inflammatory reaction, its course is that of a closed fracture treated by osteosynthesis.

When there is local infection after a complicated fracture treated by osteosynthesis has become consolidated, rarefaction of the bones around the wire is rare, and when it occurs will not disturb consolidation, but may have to be cleansed to hasten recovery.

In his pleas for more conservative treatment of the bone injury in compound fracture W. G. Stern states (and I thoroughly agree with him) that there are two vital factors to be considered: first, the injury to the soft part; and second, the injury to the bones. When the injury to the soft parts is not so severe that the fracture is merely an incident in the crushing and mangling of a limb the immediate treatment of the osseous injury can be advantageously begun, and it is Stern's opinion that the strictest conservation, the avoidance of all operative measures on the bones and the reduction of all manipulations to an irreducible minimum, followed by accurate splinting and absolute immobilization for a period corresponding at least to the danger period for possible infection, will be followed by the least infection, the least interference with the blood supply, the least number of cases of osteomyelitis and non-union, and the best and quickest recoveries.

In the soft tissue besides hemostasis, cleansing and anatomic rearrangment of parts, only a few sutures should be used, and the muscle bellies and the fascial planes should not be tightly sutured. The usual cleansing technique is as follows:

The surgeon is gowned, masked, and gloved as for a major operation. The limb which has previously been shaven, is thoroughly cleansed with ether on a sterile sponge held with sponge-holder. The parts are draped with sterile sheets and towels, and the skin and wound painted with 6 percent picric acid in alcohol. The protruding ends of the bones are also cleansed with the picrate and then with gentle traction and manipulation, are reduced. When the opening in the skin is not large, and difficulty is experienced in reducing the fragment, they may be shoved back with a blunt instrument or the gloved finger.

It is better to enlarge the skin wound with a pair of scissors (the other tissues being separated when necessary by blunt dissection) until manipulation and traction are effective in reducing the fragments, after which the skin is to be loosely closed, enough space between the sutures being left for the escape of wound secretions into the dressings.

Do not overdo debridement, it is often overdone. In twenty-five year's experience in mining districts I have seen few cases in which typical or extensive debridement was indicated.

After the reduction of the fracture and the closure of the skin, the wound is to be covered with sterile dressings and the limb securely immobilized. Some surgeons prefer immobilization in the modern extension splints where practicable but immediate fenestrated plaster casts and properly constructed pillow splints have their appropriate place. The patient is then placed at complete bed rest, quiet to be maintained by sufficient opiates and sedatives.

Complete rest is of utmost importance

in combating infection. The sedative treatment should be continued for at least a week, after which the further treatment for the healing of wounds and the complete reduction of the fracture can be undertaken as indicated.

Roentgenograms should always be taken, and if possible in bed. The worst results I have seen have been cases where the bones have been plated, wired, screwed, resected or otherwise operated on, or unduly manipulated promiscuously. Let me emphasize the importance of maintaining length and position in the treatment of compound fractures by fixed traction

By fixed traction is meant traction that is applied when the fracture is reduced and so immobilized or fixed in the immobilizing apparatus that it and the fractured extremity remain undisturbed and unaltered until at least preliminary healing has taken place. The technique is as follows, e.g., for compound fractures of the lower extremity, adhesive plaster traction straps are used, three inches wide and varying in length for fractures of the leg or thigh. The frayed ends of a strong pliable rope are tied or sewed into the distal end of the straps to be used for traction purposes. The straps are applied to both sides of the limb well up to the site of fracture, and bandaged into place with muslin bandages. The patient is anesthethized on a fracture table, if you can get one; traction is instituted by a muslin bandage about the foot, and the rope-ends are attached to the traction device by which a pull is made and continued until the limbs are of equal length.

The cast is applied in the usual manner, as low on the extremity as the ankle. After the plaster has sufficiently set, traction having been continuously maintained by the foot bandage, the traction ropes are cut from the holding device, turned back against the leg portion of the cast, and embedded in the cast by several turns of plaster bandage, thus anchoring them and maintaining traction.

When the plaster is set, the muslin bandage anchoring the foot is removed, and the foot is then wrapped in sheet wadding, and the cast applied with the foot at a right angle to the leg.

By immediate surgical toilet of the region, one will often be able to suture at once, thus transforming the compound into a simple fracture.

Pearson concludes that the experience gained in the world war has taught surgeons that the majority of fractures can be efficiently treated by non-operative measures. A marked displacement of fragments does not necessarily indicate open treatment, as in many such cases reduction may be effected by manipulation, moulding and extension. Non-operative measures should be tried first in all cases. Operations are rarely indicated in old people or children, and the bones do not respond very well to operative fixation.

Extensive comminution of the fragments is also a contraindication to immediate operation. The best speech I ever heard on the treatment of fractures, was by E. W. Ryerson of Chicago, who said, "It was the application of common sense," and I would add to this an instinctive sense of mechanics.

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CERVICAL RIB

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The recognition of the incidence of cervical rib has been greatly increased since routine X-ray examination has become a part of all complete physical and laboratory examinations. In one of the large clinics of the United States, in a series of 540,413 new patients examined, there were 393 cases of cervical rib, representing an incidence of .056 percent. Of these cases, 84 were in males and 219 in females. In 143 cases were bilateral cervical ribs, in 70, a cervical rib on the right, in 91 a cervical rib on the left. Of these patients 55 percent were discovered accidentally and in 45 percent there were symptoms that lead to examination for this condition.

Gruber's classification is the one generally accepted and divides cervical ribs into four classes, depending on their length:

1. A costal process increase not reaching beyond the transverse process. (Cases under this group are not classed strictly as cervical ribs).

2. Extending beyond the transverse process, terminating in a free end or united to the first rib.

3. A longer rib than in Class 2 and attached to the first rib by a ligament.

4. Complete ribs.

The symptoms of cervical rib do not usually develop until the second decade and may appear as late as 55 or 60 years. Various reasons are given for the late appearance of the symptoms. The ossification of the rib with resulting increase of rigidity, traumatism, exemplified in the carrying of heavy weights in the hand or on the shoulder which would drag the extremity downward and so increase the tension on the lower nerve roots; poor muscular development or marked relaxation following a debilitating illness.

The symptoms are: (1) Pain and sensory symptoms. These are first intermittent and later may become constant and referred most frequent to the ulnar border of the forearm, the little and ring fingers. (2) Recurrent pallor of the hand and forearm. (3) Motor paralysis with atrophy.

The first motor symptoms are usually expressed by difficulty in carrying out some of the finer motions such as sewing or writing. Later, however, the extensors of the wrist and fingers are weak. Vascular symptoms begin in the fingers and spread up the arm as the arteries gradually become obliterated.

Tumor formation is the supra-clavicular triangle has been noted in some cases. This tumor is rather tender to the touch and on it sometimes may be felt the pulsating subclavian artery. This pulsation may be mistaken for an aneruysm. The symptoms referable to the face from cervical rib are usually overlooked. Eye symptoms have been reported by Osler as dilation of the pupil on the side affected. Schomebeck reports a case of the widening of the palpebral fissure with dilation of the pupil on one side. Myers reports one case which complained of numbness of both jaws and of the lower face.

With involvement of the first and second thoracic nerves there may be a resulting inter-costal neuralgia.

Of course, the final diagnosis is made by the X-ray. However, there are so many cases of cervical rib without symptoms, and some cases of the cervical rib syndrome without a demonstrable rib, that one should be constantly familiar with the picture to elicit unquestioned cases for operative treatment.

There have been three classes of operation described for the removal of cervical rib:

1. The anterior incision is made along the posterior border of the sterno-mastoid muscle.

2. The lateral incision in above and parallel to the clavicle and runs along the anterior border of the trapezius muscle.

3. The posterior, in which a vertical incision is made to the side of and parallel to the spinous process of the cervico-dorsal vertebrae.

In some cases it may be necessary to remove the supernumerary rib. However, an operation as described in the 1927 edition of The Mayo Clinic, has proved in my hands thoroughly successful, and I am going to call your attention to the details of this technique, believing that in most instances this will perfect a cure, and is not only technically simple but practically devoid of the many dangers which attend the radical operation of the complete removal of the rib.

An incision about two and one-half inches long is made parallel to the clavicle, beginning at the sterno-clavicular articulation and is carried down to the scalenus anticus muscle. Lying on this muscle will be found the phrenic nerve. This should be retracted inward and the insertion of the scalenus anticus into the clavicle completely severed. Care should be taken to avoid injury to the subclavian artery and the apex of the pleural cavity when the muscle is divided. The usual closure of the incision will complete the operation.

It will be apparent to each reader of this article that by removing the pressure of the scalenus anticus, a decompression procedure is perfected which will in most cases relieve all symptoms caused by this condition.

In support of this procedure, I wish to report the following case:

Case No. 2201—Mrs. C. R. Diagnosis: Bilateral cervical rib. Patient is housewife, age 38, giving a negative family history. Patient's past medical history shows her to have had no serious illnesses, having had the diseases of childhood without complications or sequelae.

Her present complaint dates back two years since which time she has suffered from periodical pain along the distribution of the branches of the brachial plexus. These symptoms have been gradually growing worse and have been more troublesome during the night. Many nights she has been unable to get her arm in a comfortable position and in spite of aspirin and local heat she has lost a great deal of sleep.

Examination of the head, including both neck and throat is negative. There is a slight enlargement of the thyroid, however, no symptoms of thyroid toxicity. There is a slight bulging on the right side of the neck about one inch above the clavicle and pressure over this location causes some discomfort. Examination of the chest and abdomen is negative. Pelvic examination except for an enlarged and cystic condition of the right ovary is negative.

X-ray of the thyroid and cervical region: Increased density is noted in area of the thyroid. There is calcific deposit in small quantity and not connected with the spine.

Supernumerary ribs left cervical and right cervical; verified in subsequent examination.

Diagnosis: Bilateral cervical rib with pressure on left side with no disturbance of circulation, but irritation of the brachial plexus.

Operation: Decompression operation.

Anesthetic: Ethylene and n20-02CO.

Gross findings: Bilateral cervical rib with pressure symptoms on left.

What was done: Incision through skin and platysma extending from costo-sternal junction of first rib outward and upward for 2 1-2 inches. Clavicular insertion of sterno-mastoid severed. Phrenic nerve isolated. Scalenus anticus insertion severed and sterno-mastoid repaired. Fascia closed with No. 1 plain and skin with horsehair. No shock or hemorrhage. Condition good.

PROGRESS NOTES

1st day: During the night there has been some discomfort in the left hand and arm; outside of that patient is comfortable.

4th day: There has been no disturbance along the nerves of the left arm since the first night. Patient sits out of bed.

6th day: Skin stitches removed; wound free from infection and thoroughly healed.

4 months post-operatively: There has been no return of any of the previous symptoms and it appears the patient is cured.

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TECHNICAL AIDS IN THE DIAGNOSIS OF PRIMARY ANEMIA

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In presenting this article, we make no claim to originality of work or to any new diagnostic procedure, but desire to present in a concise way, the technical procedures that will aid in making the diagnosis of pernicious anemia. These tests are comparatively simple and within the command of every physician, if he will only devote some time to development of technique. Neither will we attempt to present the physical findings that would aid in diagnosis.

Before presenting our subject, may we call your attention to a certain number of cases of primary anemia that do not show characteristic blood changes until late in the disease, being preceded by nerve changes, gastric changes and other physical changes that will aid in making the diagnosis. In fact, it is well for the physician to always keep in mind that the positive findings of the laboratory are more important, not to be misguided should the laboratory finding fail to coincide with the physical changes, in which case, he should correlate all symptoms and findings. Neither do we attempt to present the comparative value of certain tests in differentiating primary from second-

ary anemia, from any cause whatsoever, but merely to present the positive findings of pernicious anemia.

May we first list these procedures that will follow.

1. The blood count, with study of cells.
2. The volume index.
3. The blood platelet count.
4. Gastric analysis.
5. Bacteriological findings.

The accuracy of the blood count and the hemoglobin estimation is of extreme importance if diagnostic value is to be obtained. The hemoglobin determination with most physicians is usually obtained by one of the numerous color charts and a piece of paper that will absorb liquid. It has been our observation that this method is unreliable and that the error is so great that little importance should be attached to a hemoglobin obtained by this method. We find that the error will in some cases be as much as thirty percent. The most reliable method is the chemical determination by using the Van Slyke apparatus but this method is rather lengthy, is fraught with technical errors and is not practical for the physician. Two simple and fairly accurate methods are, with the Dare hemoglobinometer and with the Sahli. To arrive at the reading, three separate estimations should be made and then take an average of the three as a final result. The blood count is only valuable when a standardized pipette is used. In our work, we have found pipettes of different makes to vary as much as 15 percent. In counting the erythrocytes, two separate pipettes should be used and each counted in the usual manner and an average of the two used as the final count. Likewise, yet not so important is the counting of the leukocytes. Having accurately determined the number of erythrocytes per cubic millimeter and the percentage of hemoglobin, we obtain the color index by multiplying the first two figures of the red count by two and then dividing this figure into the hemoglobin. Our records show that 91 percent of pernicious anemia patients will show a color index above 1, while 99 percent of the secondary anemia patients will show a color index beneath 1. The interpretation is merely the fact that the total number of cells are decreased, but the individual cell contains more hemoglobin than the normal cell. Without some current infection, which would mask the leukocyte count, we have found that the white count is low in pernicious anemia, often as low as 1500 per cu. mm. A study of the stained slide will require some experience to interpret. Much valuable information can be obtained. The presence of nucleated red cells gives no helpful differential points, it merely indicates a severe drain upon the bone marrow, present in severe primary or secondary anemia. The presence of megaloblasts is considered by most authorities of diagnostic value, certainly, many of these found in the circulating blood would materially aid in making a diagnosis. Polymorphonuclear leukocytes are greatly decreased, likewise the eosinophiles and basophiles are either decreased or absent. Myclocytes are occasionally found. A study of the individual cell is of much value, many irregular cells (poikilocytosis) are found, varying in size from the very small cell (microcyte), to the very large cell (macrocyte). To these large thickened cells an excess of hemoglobin is deposited and if seen from the side angle, they would appear to be bulging, instead of the usual concave-convex surface. These thickened cells also give us a high volume index as well as being responsible for the high color index.

It has been our observation that the platelets are either absent or greatly decreased in primary anemia. There are two methods of counting platelets. One, we use the red pipette and any one of the numerous diluting fluids. This method has its faults, failure to work with speed in collecting the blood, faulty fluid, and the time required for settling down of the platelets in counting chamber. The other method is to count the platelets on the stained slide, comparatively with the red cells, knowing the red count, you can easily determine the number of platelets.

The volume index is very valuable and should be employed as a routine procedure where primary anemia is, in the least, suspected. The principle of the test is simple, yet sound. If the individual cells contain more hemoglobin than the normal cell, the cell of the primary anemia patient would then be thicker than the normal cell. Not being practical to study or measure the thickness of the individual cell, several good methods have been devised, to measure the thickness of the cells, in quantity. First it is necessary to determine the mass thickness of normal

cells, under certain condition, the diluting fluid used, the method of packing the cells, etc. After determining the mass thickness of the suspected cells, taking into consideration the proportionate decrease in red cells of the anemic patient. For several years we have used Haden's method, using a graduated centrifuge tube. Recently we have been using the method described by Wintrobe in the Journal of Clinical and Laboratory Medicine, December, 1929. He recommends the use of a special tube and the advantages are the use of less blood, ease of operation and calculating the results. The interpretation of this test in short is the fact that individual cells of a pernicious anemia patient are thicker than normal cells and this test affords that determination.

The gastric analysis often affords the clearing of a diagnosis regarding primary anemia. In our experience, every patient with pernicious anemia has shown a complete absence of free HCl. Our routine test is the Ewald test meal, 400 cc, of water and one slice of plain, dry bread, removed one hour later. Fractional test meal, in this condition, has given us no information not obtained from the regular one hour meal and we have discarded the fractional meal because of the discomfort to the patient, when no added information is obtained.

Bacteriologically, we have found nothing of importance. We have endeavored to verify Torrey's work, where an increased number of bacillus aerogenes capsulatus of Welch are isolated from the intestinal tract. We have succeded in a few cases, but our experience has not proven of value in making a diagnosis.

In concluding, we wish to stress the importance of accurate study of the blood and gastric contents. The tests are simple and within the realm of every physician and no case of primary anemia should go undiagnosed because the physician did not have a laboratory available. If he will keep in mind, a high color index, high volume index, decreased platelet and absence of free HCl from the gastric contents, he will have obtained the valuable data, so far as the laboratory diagnosis of primary anemia is concerned.

RELATION OF OTOLOGY AND GENERAL MEDICINE

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McALESTER

In discussing this subject, H. Newhart' states that the attitude of the average practitioner toward the subject of otology after graduation, or as soon as he finds compensating work in other lines, is usually one of passive indifference, if not one of confessed helplessness or even boasted ignorance.

That the general practitioner is not enthusiastically interested in otology is due largely to the failure of undergraduate schools to provide adequate instruction in this subject, with the result that the graduate in medicine is insufficiently prepared to cope successfully with even the ordinary ear disorders which fall very properly within his province. Another factor which has made otology unpopular has been the almost universal tendency of the laity and the profession to neglect all but the most obvious or painful ear affections, until it is too late for even the specially trained otologist to handle them with any possibility of seeming brilliant or satisfactory results. This tendency to neglect the ears is almost as common among the intelligent and well-to-do as among the indigent.

How poorly the profession has succeeded in the practical application of the first principles of modern otologic teaching and how great is the need for an awakening of interest in the subject are convincingly proved by the prevalence of ear diseases and the consequent impairment of hearing which exists at the present time.

The responsibility for the prevention of ear diseases, in common with all other beneficient movements for health reform, rests primarily with the medical profession, and his responsibility falls with much greater weight upon the man in general practice than upon the otologist; for it is the former who, through frequent and intimate contact with the many, is alone in a position to give help and advice at the time when it will be most productive of results.

While public interest has for a long time been actively concerned in the conservation of vision, and nearly all the states have laws to prevent ophthalmia neonatorum and to safeguard the eyes

against carelessness in industrial plants, and there exists numerous societies to promote the welfare of the blind, there has been a conspicuous absence of organized efort for the prevention of ear diseases, and only in the last few years have specific steps been taken in this direction. But we must acknowledge with pride the liberal provisions which have been made for the education of the deaf.

The situation as regards the prevention of deafness, however, is rapidly changing. The concern of all classes has of the last few years been aroused as never before to the need of bettering the physical condition of the individual; and in this fact lies our chief hope for a speedy improvement in the situation as regards the conservation of hearing.

One of the main causes of deafness is neglect of the physician to give or advise proper treatment, or neglect of the patient to take proper treatment in acute catarrhal otitis media and acute purulent otitis media.

Acute catarrhal otitis media: Treatment, the patient should be put to bed, or at least kept indoors. A mild aperient should be given. In children 1 gr. of calomel answers the purpose.

If there is coryzal rhinitis, that must be treated. Earache from acute catarrh is best combatted by the instillation into the meatus of the infected ear of Rx—Ac. Carbol dram 1; Glycerine Ad oz 1—warmed before use, and retained with a plug of warm wool in the meatus. The patient lies on the affected ear on a rubber hot bottle, a pad of wool being interposed to mitigate and regulate the heat. Sweet oil and laudanum should never be used on account of the micro-organisms in the sweet oil which would infect the middle ear in case the ear drum should rupture.

If this fails, however, and if the membrane is seen to be red and bulging, it should be incised lest suppuration should develop, but if there is bulging without redness and without pain, the catheterization of the eustachian tube will probably suffice, in adults at all events, to relieve the symptoms.

When the ear disease has been cured, attention should be directed to the nasopharynx (adenoids), nose (chronic rhinitis), turbinal hypertrophies polypi, sinus suppurations, deflected septum, and pharynx (tonsils), so as to prevent a recurrence of the disease.

In the discharge of his obligations to the public in the field of otology; the medical man must help to combat certain popular fallacies regarding the ear, some of which, unfortunately, lurk as superstitions in the minds of not a few of the professions itself.

I refer among other things to the prevailing attitude toward operations on the mastoid. Many lives are sacrificed annually because of a traditional, but groundless fear as to the results of such operative procedures. The indications for operations are now so well understood that, both to avoid complications, and to preserve the maximum of hearing, when once the conditions demanding operation are recognized, no time should be lost.

The almost universal neglect of chronic suppuration of the middle ear may be regarded as a serious indictment of the intelligence of the physician as regards his comprehension of modern views on the surgery of the ear. It is a well established principle that, with but a few exceptions, every chronic suppurating ear which does not yield in a reasonable time to careful treatment should be given surgical care in the form of a radical mastoid operation, but only at the hands of a skilled surgeon. The operation thus performed involves so little risk that this is negligible compared with the ever present danger from endocranial complications, the certainty of a progressive loss of hearing and the possibility of serious remote efects from the focal infection within the temporal bone.

This article does not advocate that every man in practice should qualify as a specialist in otolaryngology. It does, however suggest the question: To what extent may the general practitioner invade the special field of the otolaryngologist? The obvious answer is that the man in general work, if he would meet the urgent needs of his practice and discharge his just obligations to the public, must be prepared to give better service in the line of otolaryngology than in the past. His activities, however, must be strictly confined within the limits of such procedures, as he is qualified safely and intelligently to perform, and should never be extended to the point of assuming responsibility beyond his skill. Moreover, the scope of his work must depend in each case upon his indi-

vidual training and upon the geographical location of his practice as regards accessibility to men of more highly specialized training than he himself possesses.

The passing of ear diseases and of deafness within the life period of one generation cannot be hoped for by even the most optimistic, but through a generous cooperation on the part of the general practitioner and the otologist and the utilization of every educational and other agency engaged in a crusade for better hygienic conditions, we may hope to see with a single decade a great reduction in the number of those destined to be afflicted with ear diseases.

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EPIDEMIC CEREBROSPINAL MENINGITIS — A HEALTH OFFICER'S VIEW.

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As the name implies, this form of meningitis occurs epidemically, and due to the specific organism, the diplococcus intracellularis. Its first appearance in the United States was 1806, and since that time epidemics have occurred in all parts of the country.

The organism is of the slight viability on all media, the best being agar, to which has been added sheep serum, and two percent glucose; cultures are kept alive five or six days in this media. Freshly isolated cultures are more virulent than the ones artifically grown.

The organism is supposed to gain entrance to the system through the nasal mucous membrane and through the upper respiratory tract to the blood stream, or a direct infection through the lymp channels.

There is no doubt that the nasal mucous membrane is a carrier, and the fact that the organism is present in the naso-pharynx of healthy persons, shows how the disease may be transmitted by carriers who never develop the disease.

Cerebrospinal meningitis has no respect of age, as children and adults are stricken alike. Rotch reports a case in an infant twenty-four hours old.

The pathology of this disease shows an intense hyperemia of the meninges of brain and cord, which is followed by an exudate of thick seropus. The entire surface of the brain and cord is covered with this exudate, which also extends in the fissures of the brain, and between the pia and cortex, and the ventricles may contain a large amount of fluid.

The meningococcus is found in the cells and exudate, and larger numbers of polymorphonuclear neutrophiles, than lymphocytes are found. There is a high leucocytosis.

The organism is a gram-negative, biscuit shaped, and like the gonococcus chiefly contained in pus cells.

SYMPTOMS

The onset as a rule is abrupt, but the diagnosis cannot be made on first day of illness. Vomiting, followed by chill or rigors and high temperature, and very often convulsions, are among the early symptoms. Headache is constant and often agonizing, there is pain in back of neck, and early delirium is frequent. Backward retraction of the head and back occur early with rigidity of neck.

The vomiting at this stage is projectile in character, and the whole picture is one of an overwhelming infection from the very beginning. Fever ranges from 102 to 104 but may go very much higher. Reflexes are exaggerated. One of the most characteristic symptoms is the development of an eruption of the body, at first hemorrhagic in character, and later resembles large bruised-like areas. Herpes is found on lips and face. Kerings' sign is usually present, also Babinski reflex; coma may develop early. Otitis media is sometime present as result of an early infection of the middle ear. Purulent conjunctivitis is often present, also corneal and conjunctival anesthesia, muscle soreness, especially in the lumbar, erector spinae, thigh and upper arm muscles.

Several types of the disease are seen in the same epidemic, the rapidly fatal cases, which die within two or three days, or even less, within eight to ten hours. The milder cases, in which the symptoms are not nearly so severe, and those cases which are very mild and of short duration.

Prognosis under former methods of treatment varied in different epidemics. Mortality was from sixty to ninety percent, while now under the serum treatment the mortality is from nineteen to

forty percent, hence early diagnosis and treatment are very necessary. Diagnosis is best cleared up by use of lumbar puncture and examination of the cerebrospinal fluid for the specific organism and the occurrence of a second or third case in a vicinity is often sufficient to make a positive diagnosis.

TREATMENT

The serum treatment is the only one which offers any hope of cure. The average dose of serum should be from twenty to thirty cc. and the first dose of serum should be slightly smaller than amount of fluid which has been removed. The serum treatment should be repeated about every twenty-four hours until four to five doses have been given, or until the meningocci has disappeared. The serum is harmless and has brought about a decided reduction in mortality of the disease—from eighty to thirty percent. Lumbar puncture should be performed in every suspicious case at once, and if the fluid is turbid, twenty to thirty cc. of warm serum injected.

The fluid withdrawn should be examined for the organism, and if found, the injection repeated daily until symptoms are improved. The injection should be made very slowly by gravity, the serum having previously been warmed to a few degrees above body temperature, and due probably to the elasticity of the tissue in children; they can be given practically as large doses as adults, and even in infants the doses are much greater than in proportion to the body weight.

Some discomfort is often noted toward the end of the injection, and this, if very severe, is a signal for stopping, and since the amount which can safely be injected is limited, however, every effort should be made to allow this to be maximal, by withdrawing as much fluid as possible, and by proceeding with injection gently and carefully. At the conclusion of each injection, the foot of the bed may be raised six to eighteen inches for three hours to allow the serum, which is of a higher specific gravity than spinal fluid, to gravitate toward the cerebral meninges, and for three hours before puncture is made, the head may similarly be raised to facilitate the denser exudate seeking the subarachnoid interstices of lumbar region.

In cases where you are in doubt, but almost sure that you are confronted with the disease, and can not get the serum for several hours, a lumbar puncture will relieve your patient and may save his life, but give the serum as soon thereafter as possible. Symptomatic treatment consists of free purge, bromids, hypnotic, etc.

History from five cases of personal observation:

Case No. 1—Child, three years of age, had been sick forty-eight hours, head drawn back, neck stiff, coma, etc. Lumbar puncture made, fluid withdrawn, serum given, for four doses twenty-four hours apart. Child recovered but totally deaf.

Case No. 2—Boy, nineteen years of age, sick eighteen hours, lumbar puncture, fluid withdrawn, serum given, died fourteen hours later.

Case No. 3—Boy, nine years of age, sick ten hours; lumbar puncture made, fluid withdrawn; died one hour later.

Case No. 4—Man, thirty-three years of age, sick six hours; died.

Case No. 5—Boy, seven years of age, sick twelve hours; lumbar puncture, fluid withdrawn; serum given, repeated every twenty-four hours for four doses; died on fifth day.

I wish to call to your attention that more males have the disease than females.

Lumbar Puncture: The patient on side with head and shoulder elevated, and slightly bent forward, putting the tissues of the back on stretch. This position favors the flow of fluid. A general or local anesthetic can be administered if desired. The puncture is made with ordinary aspirating needle, or small trocar; the space between the third and fourth, or fourth and fifth lumbar vertebra. The iliac crest is on level with fourth spinous process.

The question of control of epidemics is a most important one. Strict quarantine of all cases should be maintained, and the nasopharyngeal secretions of recovering cases carefully examined and all contacts examined before being released.

X-RAY OBSERVATIONS IN LOW BACK INJURIES

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Any effort to promote a better understanding about injuries occurring in the lower back is likely of interest to surgeon and radiologist alike; and, for this reason, I desire to call attention to some injuries which are important enough to be of more than passing interest. The average back case presented in this day of industrial court supervision encourages us to take sufficient time not only to study out the individual, but also, contributory factors which will in any way accelerate recovery. With the somewhat confusing array of symptoms presented to the doctor by the average claimant, and with the various reports of findings and re-examinations confronting him, the doctor has learned to keep his notes accurately and close at hand. The commonest injury presenting is probably that of a lumbosacral sprain. When this occurs the usual symptoms are pain at the lumbosacral joint and radiating probably to the crest of the ilium or up the spine laterally, and sometimes as high as the ribs. Other symptoms depending upon the extent of the sprain and attitude of the patient are likely included. X-ray examination is so frequently made light of because of what is commonly expressed as negative findings, it being the thought that if a patient has a real injury it can be clearly demonstrated by means of the X-ray, and should this be not done the fault lies with the exaggeration of symptoms by the patient or a mediocre ability of the X-ray man. As a matter of fact, referring to the lumbosacral anatomy, we observe that the spinal curve is fairly regular and the fifth lumbar is tilted within normal limits to an angle of between 40 to 45 degrees. Likewise, we notice the articular processes guarding against the slipping of the fifth lumbar forward on the sacrum. Now not all cases are normal. In fact, congenital abnormalities in the lumbar spine and pelvis are seen in about 35 percent of the cases examined, and only about half of these abnormalities produce symptoms, but a developmental defect that does have a bearing in these back injuries is the one which permits deviation from the normal of these articular processes, which leaves the fifth lumbar with poorer bony support than normal. The most frequent type of back injury that we have coming up in the industrial examinations are among those patients who were injured while in a stooping position or while bending forward and were injured by a fall of rock upon the back, increasing the flexion far beyond what is considered a normal limit. In such a case, the fifth lumbar, which participates in over half of the motion by the trunk below the twelfth dorsal, is made to glide extremely high if indeed not slip beyond the articular processes of the sacrum. In any event, this allows a severe strain of the ligaments supporting the joint and of the muscles, and more especially of the ilio-lumbar ligament between the transverse processes and body of the fifth lumbar and the crest of the

PLATE A

ilium. In this type of case the X-ray is of especial help in determining the angle of the fifth lumbar and noting the character and position of the articular processes. Another type of case considerably disputed is the sacro-iliac sprain. While the pain in such cases is frequently not distinctive enough to separate it from the lumbosacral sprain just referred to, there is a marked tendency for the points of tenderness to be below the lumbosacral joint and over the synchondrosis, with pain radiating to the buttocks, hip and thigh. The majority of X-ray films may be negative, but not infrequently there are signs of new bone in the suspected area and occasionally slight deformity noticed in the pelvis. Plate A is an example. In this examination a slight lipping of the anterior margins of the third lumbar was noted. The sacro-iliac synchondrosis on the right side appears uneven, the iliac portion being slightly lower than the corresponding sacral portion. There is also slight bone production along the line of contact. A diagnosis of old sacro-iliac sprain seemed justifiable.

Statistics on fracture of the fifth indicate that this is an unusual injury. In fact, it is sufficiently rare that X-ray films clearly demonstrating the fracture are not without interest even in the largest laboratories. Plate B is a lateral in which the fifth lumbar shows the characteristic irregularity of outline of the body and uneven density. These signs are produced by crushing fracture, and with the usual appearance of light callous in this type of bone, anteroposterior views of this patient were comparatively n e g a t i v e, which manifests the fact that good laterals of the fifth should be procured wherever possible following an injury produced by acute flexion. I am pleased to record that the X-ray findings in the cases reported were wholly verified by the clinical report made by the attending surgeons.

Ainsworth Building.

PLATE B

PLATE B

TULAREMIA

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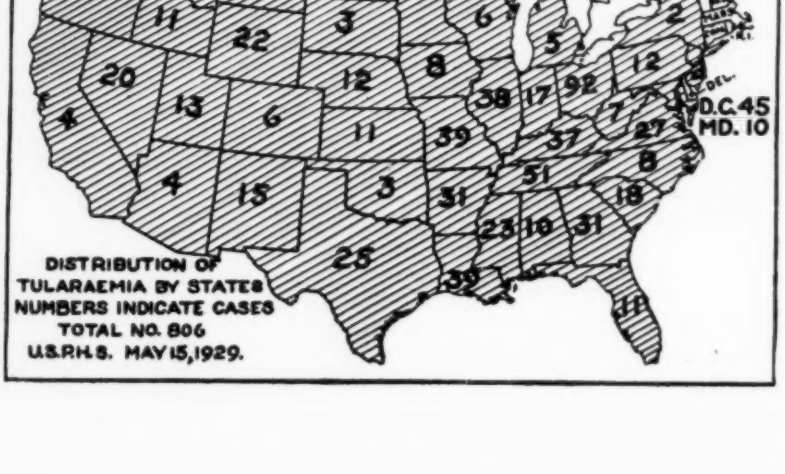
Tularemia made its appearance on the public health and diagnostic horizon in 1911, when McCoy found some of the rodents of Tulare county, California were dying of a strange disease and later man was shown to be stricken with the same trouble by the intermediary of rabbit lice, bedgugs, etc. Until now there has been over 800 cases reported in the United States. It has been definitely proved that O'Hara's disease of Japan is identical with this plague. The past year has added about 1100 cases in some of the provinces of Russia, contracted from the water rat.

England has had a few cases among laboratory workers but there seems to be no cases reported to the north in Canada or the southwest in Mexico. Reports of 24 laboratory workers who have contracted the disease. Cases have been reported in every state in the Union except the New England States, Delaware, and Washington. Simpson of Dayton, has so enlightened the profession of Ohio, that they have diagnosed 92 cases, the greatest number of any state. Francis's missionary work in Washington, D. C., has resulted in tallying up 45 cases there. He examined 1000 rabbits shipped into the markets there and found positive evidence of Francis's disease, Rabbit disease, or tularemia in 9 per cent of the carcasses. Hence you see it has become a matter of considerable significance as a public health problem. It has a vast economic problem because of the great number of cases and the fact that the convalescence as a rule is slow. It is rare for a patient to be at work again at the end of a month, usually the second month is spent lying about the house owing to weakness on exertion, and during the third month only half time work is performed. Some have not entirely returned to normal for six months or even a year. The case I am about to report is unusual in the fact that the patient was ill with fever only five whole days and only evening fever thereafter for four days. That his loss from work was only five days and he was on full duty in seven days is rather remarkable because of the usual slow convalescence as stated above.

CASE REPORT

C. W., age 29, 1804 West Thirteenth Street, February 1, 1930. Vocation: Bell Telephone Company. Avocation: hunting with his dog after business hours and holidays, frequently shooting and skinning a rabbit for his dog. About November 20, he shot and skinned a quail and pricked the distal phalanx of his right thumb with a broken bone of the bird. This healed over nicely at first but always tender when he opened up a painful inflamed papule and let out a drop of "pus" leaving a punched out appearance of the lesion, with raised edges, the size of a match head, which in healing has left a small scar at this time. "Leaders" running up his arm became sore but never saw

This map taken from Simpson's article Journal Laboratory and Clinical Medicine, January, 1930, shows only three cases reported in Oklahoma, and those are reported by Dr. Lee Wilhite of Perkins, Okla. We have not recognized this disease or we should have reported more from this State where we have such abundance of game and so many hunters.



any red streaks but could never raise his arm to a right angle to the body because of a pulling sensation, and a tenseness of certain stringlike cords which felt like piano wire stretched subcutaneously to the inner edge of the biceps. Sick Thanksgiving day with "flu", so diagnosed by an M.D. Felt bad on arising but went hunting anyway, came home at noon with raging fever, myalgic pains, profuse sweating, headache, vomiting and chilliness. Fever lasted four days, rather high. Friday p. m., temperature of 105 but says was much sicker on Thursday night and Friday morning. Was at home until Monday afternoon when he went down town. Still had fever but not so much. Felt that he had evening fever, with morning remission, which lasted all that week. Was at home on Tuesday morning until noon but lost no further time from business. Motion of the arm has never hurt him, but has a pulling sensation as though held back by some shortening, when arm is raised at right angles from his body.

No epitrochlear glands palpable. No general adenopathy. No palpable spleen. Liver not palpable or tender. BP 120/80. Pulse 60, temperature 98.6 at 5:30 p. m. Hemaglobin 80, RBC 4,600,000, WBC 7,200, neutrophiles 77, S. L. 19, LL 4, knee jerks and general neurological examination negative. Physical strength and energy not impaired. Urine negative. Fluctuating mass in right axilla opened under local anesthesia and mucopurulent material drained, leaving a smooth cavity much like the inside of a large egg shell. No peri-adenitis or inflammation of the skin. Culture from abscess was staphylococcus aureus in pure culture. State laboratory reported blood titration 1-640 for tularemia. Francis Hygienic Laboratory, Washington, D. C., reported 1-640 titration for tularemia.

No skin eruption noted during the course of the disease. (A very definite skin eruption usually bilateral was noted in thirty-two cases. It was macular, papular, pustular, maculopapular, papulopustular, blotchy, or a rash. In some cases it was painful and inflammatory, but was usually painless and did not itch. Desquamation and pigmented remains have been noted. Many acne lesions developed on the back of thorax during the illness in two cases. Extreme herpes was noted in one case. Jaundice was observed in one case.)

DISCUSSION

Pricked end of thumb with quail bone. (1) Pricked skin healed over and became sore and had to be opened with a pin. The primary lesion is a granuloma, not a purulent lesion and nothing is gained by incision. Systemic condition generally made worse by surgery thereby opening up a new area for absorption. Kernel occurred in axilla on day after Thanksgiving (24 hours after initial symptom), got sore but never inflamed. Began to increase in size Christmas, after hunting that day. Saw no inflammation or tenderness or redness about the soft fluctuating globular mass. Enlarged non-inflammatory axilla glands, right, and hard string like fibers, like piano wire running into these glands along inner border of biceps. Suppuration of lymph glands has been noted four, five, six, eight, nine, ten, fifteen, and even twenty-two and twenty-four months after the onset of the disease. Recovery usually occurs without evident sequelae.

DIAGNOSIS

History of having dressed or dissected a wild rabbit, or of being tick bitten or fly bitten; (2) a primary lesion of the skin in the form of a papule, followed by persistent ulcer or a primary conjunctivitis, followed often by ulcers of the conjunctiva; (3) Persistent glandular enlargement in the region draining the primary lesions; and (4) fever of from two to three weeks duration. Microscopic examination of cover glass preparations are useless for diagnosis. The final diagnosis of tularemia rests on the isolation of B. Tularense, a gram negative coccobacillus which was grown first on systine glucose agar, from guinea pigs inoculated with material from the lesion, glands or blood of the patient or the agglutination of a stock culture of B. Tularense with the patient's blood serum.

Diagnosis of these cases depended upon the following tetrad: (1) Having dressed or dissected a rabbit, water vole, sheep, muskrat, wild game as quail, grouse and increasing numbers of harbingers of rabbit, ticks, bedbugs or being fly bitten by flies that have previously bitten an infected object. Incubation period from 2 to 9 days. The shorter the incubation the more virulent the course. One reason why the case I am reporting was so mild was that the incubation period of as long as seven days. (2) A primary lesion of the skin in the form of a papule followed by a persistent

ulcer, which leaves a scar on healing, or a primary conjunctivitis followed by an ulcer of the conjunctiva. In laboratory workers, several have become ill without any primary lesion, guinea pigs have died with the disease after rubbing a piece of spleen or some other lesion on the unshaven skin, rats will become infected after eating contaminated bedbugs. (3) Persistent glandular enlargement in regions draining the primary lesion either in epitrochlear or in arm or axilla. The glandular enlargements usually are found simultaneously with the abrupt onset of the fever. They may subside gradually and subsequently enlarge with about one-half of them going on to suppuration. By way of parenthesis, would say that no surgeon operating on these glands, no nurse or attendent has ever contracted the disease from their patient, *i.e.*, no instance has been reported of the spread of the infection from man to man by mere contact. Microscopic or cover glass examination from these supporting glands have been useless until Simpson, Journal Lab. and Clinical Medicine, Vol. XV, January, 1930, claims to have grown Bacterium Tularense on artifical culture medium a human serum modification of Francis cystine, glucose, meat, infusion peptone agar for the first time. The final diagnosis of Tularemia rests on the isolation of Bacterium Tularense from guinea pigs inoculated with material from the lesion, glands or blood of the patient. (4) Agglutination first appears in the second week and increases in strength until after the sixth week when it gradually lessens the strength of the titer, remaining a known positive for as long as twenty years.

Francis found in about 37 percent of the cases, it cross-agglutinates when titered with undulant fever of low titer. One attack confers permanent immunity hence laboratories where the research of this disease is being carried on are glad to get one who had previously contracted and hence not subject to recurrence.

Francis describes four clinical types after a study of 679 cases:

1. *Ulceroglandular Type*—The primary lesion is a papule of the skin, later an ulcer and is accompanied by enlargement of the regional lymph glands.

2. *Oculo-glandular*—The primary lesion is conjunctivitis and is accompanied by enlargement of the regional lymph glands.

3. *Glandular Type*—There is no primary lesion at the site of infection but there is enlargement of the regional lymph glands.

4. *The Typhoid Type*—There is no primary lesion nor is there glandular enlargement. The word "typhoid" is used here in the sense of an absence of manifest external lesions and not signifying the so-called typhoid state of the mind.

SOME OBSERVATIONS OF POST VOLSTEAD ALCOHOLIC PSYCHOSIS

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NORMAN

The purpose of this paper is to bring to your notice some observations, made during the past five years on one hundred and five cases of alcoholism. A few of these points I do not find mentioned in the recent literature.

In the first place, there has been a decrease in the numbr of cases admitted to hospitals. Dieffendorf, 1914, states that 25 percent of all cases admitted to hospitals, were sent there because of alcohol. A 1920 edition by the same author gives only 15 percent; Wiliam A. White in his Manual of Psychiatry again reduces this figure to 12 percent. Stephen Perham Jewett states that in his experience not more that 4 1-2 percent of the ascendants of the insane and mental defectives are alcoholic. Now, in spite of all we hear these days concerning drinking, by the young and old, you can clearly see that there has been a very decided reduction in the number of cases reaching the hospitals. While there may be more drinking I doubt it; if so, why should the number of cases sent to the hospitals show such a marked decrease. The part that alcohol plays in producing psychoses, while very important, is not fully understood. Of all the pharmacotoxins with which pathology, and particularly neuro-pathology are concerned, none is so important as alcohol. In this country it is chiefly whiskey drinking which is responsible for the greater portion of chronic alcoholism. When one considers the numerous ways in which alcohol may enter as a factor in producing mental disorder, and its far reaching effects, it is readily seen that

statistical study cannot begin to fathom the problem.

In attacks of psychoses brought about by alcoholic indulgence, it is probable that they are considerably modified, and present a somewhat atypical picture. We must not forget that psychoses produced as the result of the abuse of alcohol, are dependent in the final analysis upon something besides the alcohol; namely, upon some peculiarity in the make-up of the individual. Just here I think a little discussion of the effect of alcohol will prove beneficial. Why is it that one man who has been a daily consumer of alcohol for many years, reaches a ripe old age and dies with mentality unimpaired, and with no inflammatory changes due to the use of alcohol, while another, after a comparatively short life, suffers in one organ or another after a relatively short use of the same intoxicant. The answer lies in the original inferiority of some specific organ, which may be the central nervous system.

What is the action of alcohol, is it stimulant or depressant? For many years it has been considered as a stimulant. Such supposition, however, has been based largely upon false interpretation of subjective experiences. As an example, one feels rested by a small dose of alcohol. The rested feeling was supposed to be due to stimulation, while on the contrary it is due to inhibition of the sensory channels, conveying the sense impressions that make up the feeling of fatigue. Alcohol always acts as a depressant and never as a stimulant.

The types of persons who drink and the reasons for drinking are many and varied. While there are certain social factors involved, the more important lie in the make-up of the individual. First, we find the person for whom drinking is the expression of a psychosis, and not the main cause; as an example, the early paretic and mild cases of manic depressive. The alcoholic symptoms may so cloud the picture for some time that the real underlying trouble is not discovered. Secondly, there is a large group to which belong those who drink to drown their troubles, and to escape from reality by introducing a veil between it and themselves, making themselves less accessible to the world of reality, by dulling their sensorium. In this group, we find the hysterics and the psychoneurotics. Also here I would like to add another type, the young business executive who has been rapidly promoted, and who, because of the tremendous amount of energy required to fill his position, feels the need of some so-called stimulant. Naturally he turns to alcohol and soon finds himself hopelessly in its power. Third, there is a large group who are especially susceptible to alcohol and although not consuming large quantities, manifest an exaggeration of symptoms. Here we find the post-traumatic; head injuries, and sunstroke. Also the unresistive types where alcohol like fever, serves as a measure of their resistance and stability. Fourth, alcohol enters into, complicates and modifies the picture of other psychoses, especially dementia praecox. These cases, many times realize their inadequacy, and drink to buoy themselves up in order to face the world on an equal footing, with others more fortunate. Finally, a certain number of purely alcoholic psychoses, that is, those that are apparently dependent upon alcohol *per se*.

Of the psychoses due directly to alcohol, we found the following types: pathological intoxication, delirium tremens, acute and chronic hallucinoses, acute and chronic paranoid types with an occasional Korsakows and chronic alcoholic deterioration. The hallucinoses have been the more prominent with the paranoid types running them a close second. We have not received as many cases of delirum tremens; either they have been treated before reaching us or they have merged into either the acute or chronic state of hallucinosis. The border line is so small and overlapping so great that an absolutely clear cut diagnosis is impossible. This holds true of all the types.

It might be well to consider at this time some of the pathology. Every organ and tissue in the body is affected by alcohol, and I am sure that you are all familiar with the various changes. However, it seems that alcohol has a special affinity for nervous tissue, as we find the most pronounced changes taking place in the central nervous system and its branches. There is actual destruction of ganglion cells, neurotic processes in the peripheral and optic nerves, as well as degenerative changes in the fibers, and an increase in the supporting tissues due to changes in the blood vessels. Pachymeningitis, edema, congestion, thickening, opacity of the arachnoid or sometimes punctate hem-

orrhages into the brain are found. The changes vary in degree and kind with the individual susceptibility of the tissues and organs, to the intoxicant. Many of these changes are brought about no doubt indirectly, through metabolic changes rather than by direct action of alcohol itself.

As above stated, symptomatology is somewhat mixed, however, there are a few cardinal points I wish to emphasize. One of the outstanding symptoms is clouding of the consciousness. It seems to me that this is deeper and more noticeable in the post Volstead types than formerly. Mental confusion with flight of ideas is quite prominent in all cases, but much more so in the hallucinoses and tremens. Hallucinations of a very disagreeable and bitter nature are coupled with delusions of persecution.

Owing to the type of alcoholic beverage obtainable now, there are a few points that seem to be worthy of special attention. Before passage of the Volstead act all whiskey was properly aged in wood. Now days this process is hastened, this being done in several ways. The barrel is washed with either a strong solution of lye or sulphuric acid, leaving the wood in such condition that a good color is imparted in a very short time. Also it is a common practice to use a little lysol as a coloring agent and impart an added "kick". One can readily see what the addition of such chemicals will do. Alcohol at the best is a powerful irritant to mucous membrane; just think how much more so it is with the addition of lye, lysol or sulphuric acid.

When these agents are not used, the raw distilled corn proves almost as efficient as an irritant. If you will pardon the expression, the "kick" and after effects are like the kick of a full grown Missouri mule. This leads to several things. Because of the strong irritant action, we are finding a large number, about 40 percent of our cases developing a rather severe trophic neuritis, this is accompanied by a dermatitis which closely resembles that of pellagra, both as to appearance and distribution. Even the tongue often takes on the red slick appearance of pellagra. I do not find this to be so common in the literature of the pre-volstead days but it seems that it is more commonly found in the cases we are receiving today.

Another point I have noted and fail to find mention of in the literature is in the blood picture. There is very little variation from the normal, with the exception of an increased eosinophile count. I have found this to be increased in about 80 percent of cases. The count varies from 2 to 6 percent and in one or two cases running as high as 8 percent. This increase was always present in those cases with dermatitis but also in many of the others. I will not attempt to explain this further than to say that eosinophilia is known to be present in skin eruptions and also in certain types of gastro-intestinal irritation.

There is one other point upon which I wish to place special emphasis. This is that the alcoholic psychoses we have now are not purely alcoholic, at least in the majority of cases. There are several reasons for this, at times there is at least a relative scarcity of whiskey, again the price at times becomes almost prohibitive. Another reason because of the adulteration as I have mentioned above, the after effects are in most cases severe, leaving a "hang-over" that requires some relief. This is found by taking any one of several drugs, namely: bromidia, aspirin, luminal, barbital, bromides, or bromo-chloral compound. No doubt you have all had some patient come to you for relief following a debauch, and, in most instances, prescribed some of the above drugs. Now here is the danger line. At first, the alcoholic takes these drugs for insomnia, or relief from headache, later he begins to take them along with the whiskey to prevent or alleviate the symptoms. Soon however, these drugs have entirely replaced the whiskey and we have a drug addict superimposed upon an alcoholic. This leads to confusion of diagnosis and prolongs the recovery. An alcoholic *per se* is always a sufficient problem to handle, but much more so is the mixed type we are now getting. Bromidia, an excellent combination of drugs if properly handled, becomes one of the most dangerous when it falls into the hands of the alcoholic. The craving for bromidia soon replaces entirely the whisky and when such a state is reached we find indeed a pitiful picture. These cases present marked clouding, confusion and disorientation; they become forgetful, care-

less of their appearance and morals, their business suffers and in most instances is wrecked. Nor do they clear up as rapidly as straight alcoholics. Further, I believe the tendency to recurrence is greater. I have taken bromidia as an example, but the same is true of the other drugs.

Now as to treatment, it is almost essential that these cases be hospitalized, as in no other way can you be sure of keeping the drugs and alcohol out of their reach. Abrupt withdrawal of the alcohol and drugs has been our practice although in one or two cases we have found it necessary to resume the use of alcohol in smaller doses and gradually decrease it. This was necessary to prevent collapse. Free elimination by both bowel and kidney by forcing the fluid intake and the use of saline cathartics. Rest in bed is essential the first few days to assist in the relaxation of the nervous system. Hydro-therapy is at times very useful both to promote elimination by the skin and for its sedative effect to the nervous system. For this purpose we have found the neutral continuous bath of two to three hours most useful. Hyoscine hydrobromide is a very useful drug during the first few days, but must be used in small doses and with caution. During the period of convalescence, the writer knows of no better drug than elixir of iron, quinin and strychnin.

In conclusion, I would sugegst that we as physicians be extremely cautious in prescribing any of these preparations to an alcoholic. While we must give them relief, we can at least exercise caution.

1. That the patient does not find out what he is taking.

2. See that our prescriptions are not refilled without a written order.

3. Do not prescribe more than enough of the drug to carry the patient over one attack.

4. To endeavor in some manner to place a restriction upon the sale of these drugs so that they cannot be bought so easily. In our experience we have found these drugs to be as dangerous in the hands of the alcoholic as opium and its derivatives.

PRODUCED ACETONURIA—ITS VALUE AS A DIAGNOSTIC TEST FOR PREGNANCY — A STUDY OF THREE HUNDRED CASES*

J. L. BULLOCH, ScD.
Hardy Sanatorium
ARDMORE

In 1923, Pritzy and Lichtman[1] reviewed their work on the tests for pregnancy and described in detail the method of Novak and Porges, which they had subjected to study and test. No other method, including the Abderhalden, has stood the test of practice. Novak and Porges's work rests upon the ease with which an artifical acetonuria may be produced in the pregnant woman, and much earlier than in the non-pregnant state. During the pregnant condition fat oxidation requires larger quantities of carbohydrates for complete combustion. Our tests show that the non-pregnant individual requires at least forty-eight hours to produce acetone, after being deprived of carbohydrates, and the pregnant woman requires much less time. This fact is the basis of our modification of Novak's and Porges's work.

With the cooperation of the local physician, three hundred cases have been studied in our laboratory, and results seem to show that this test, carefully carried out, is a valuable diagnostic test. These cases appeared at the offices of the various physicians shortly after the cessation of normal menstrual function, and were given the following instructions for their test diet. Upon arising the following morning, urine was to be voided and saved. A breakfast consisting of cereal with cream and sugar, buttered toast and coffee with cream and sugar, or a glass of milk, at 8:00 a. m. After this breakfast, no further intake of food until 5:00 p. m. At that time, another urine specimen is voided, and the first (before breakfast) specimen, and the last (5:00 p. m.) specimen are sent to the laboratory. It is important to impress upon the patient that "no food" means absolutely nothing but water. No chewing gum or "picking" is allowed, from breakfast until the 5:00 p. m. specimen is passed. The specimens are tested for acetone by a modification of the Rothera test, which is accurate and easy of manipulation. The technique is as

*Read before the Carter County Medical Socety, December 9, 1929.

follows. One gram of sodium nitroprussid is weighed out and placed in a mortar. Five hundred grams of C.P. ammonium sulphate is weighed out, and a little of the latter is placed in the mortar with the sodium nitroprussid. The two are finely ground and intimately mixed. A little more of the ammonium sulphate is added and mixed. This is repeated, adding about a teaspoonful at a time, until about 100 grams of the ammonium sulphate is thoroughy impregnated with the sodium nitroprussid. The mixture is poured out upon a large sheet of paper, the rest of the ammonium sulphate is added and the whole intimately mixed. This mixture is kept tightly corked in a wide mouthed bottle. The test proper is as follows:

About I inch of the mixed nitroprussid and ammonium sulphate is poured into a clean, dry test tube. About three inches of the urine to be tested is added, the whole inverted several times to mix and dissolve. Two cc. of full strength ammonia water is floated upon the surface of the mixture and allowed to stand for a few minutes. Acetone is demonstrated by a violet to purple color developing at the junction of the two fluids. The deeper the color, the stronger the acetone present.

A positive test for pregnancy is shown when the first tube is negative for acetone and the second tube is positive. (The first tube, being negative, shows that there was no acetone normally in the urine). A negative test for pregnancy is shown when both tubes show no acetone. When both tubes show the presence of acetone, there is an acidosis that must be eliminated before the test can be applied. Several of these have been met with in our work, but they are not included in this series. After the acidosis has been cleared up, repeated tests proved positive.

Of the 300 hundred cases studied, 257 were positive, and 43 negative. Of the 43 negative, 40 were negative clinically, and upon examination 6 months after test. Two were extopic pregnancies, which ruptured and were operated upon. One was examined thre months after test, and was clinically negative, another was lost sight of. Of the 257 positives, 7 premature deliveries, all living; 21 induced abortions, afterward hospitalized; 16 definite history of miscarriage, doctors being in attendance; 1 uterus full of clotted blood, careful examination showing no evidence of foetus; 212 normal deliveries.

The positive test which was afterward curetted, and showed no trace of a foetus, was the only apparent fallacy in the series, excepting the two ectopics, which gave negative tests.

CONCLUSION

This test, based on the work of Novak and Porges, and Pritzy and Lichtman, can be applied successfully for the diagnosis of pregnancy. At the time the test was made, the date of the last menstrual time was taken and the earliest time in which the test was positive was 27 days from the last period. A positive test proves pregnancy with certainty; a negative test does not exclude pregnancy, but renders it highly improbable.

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THE IMPORTANCE OF LONG EXPERIENCE

"There is one thing about Mead Johnson & Company I like," said the physician who had visited the Research Laboratory at Evansville. "They don't go off half-cocked. You never hear of any severe nutritional disturbances resulting from their infant diet materials. Before they put a product on the market, they study and test it with infinite patience, and very quietly."

"For example, they have been working with vitamin B for eight years and only now in the Journal of the A. M. A. for March 22 are they publishing the fact that they evolved a vitamin B concentrate eight years ago."

"They have been working on a new form of Dextri-Maltose (with vitamin B) which they are about to market. I'll wager there won't be any diarrheas or other untoward results with this preparation. Mead Johnson's research before marketing is too thorough."

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INFANTILE KIDNEY

Abraham G. Fleischman and Boyd Anderson, Des Moines, Iowa (Journal A. M. A., July 6, 1929), report one case. The following are the important and salient facts that should be remembered with reference in infantile kidney: (1) The function of an infantile kidney shows marked impairment as determined by the calorimetric dyes but still is able to excrete normal urine and concentrate urea in normal quantities. (2) The function of a kidney in which disease is present is always greater than that of the supposedly normal infantile kidney. (3) Pyelography is often of assistance in the diagnosis of this rare condition but cannot always be relied on. (4) The decision before advising surgery in a diseased kidney when the other is infantile must be made cautiously because of the inability of the infantile kidney to undergo compensatory hypertrophy an essential factor if a successful outcome is to be attained.

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Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, Barnes Building, Muskogee, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application. It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

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EDITORIAL

McALESTER HOSPITALS

This issue is largely devoted to productions of the staff of the Albert Pike Hospital, McAlester. It is not generally known but the first hospital, worthy of the name, was established in McAlester, which for many years, since the discovery of its enormous coal fields, has been one of the greatest producing centers of the State, many thousands of men being employed in it and its immediately surrounding towns, which owe their origin and existence largely to rich coal deposits.

One of the most terrible accidents in mining history in the United States occurred at Krebs mine near McAlester, in 1892. This disaster, which cost the lives of more than a hundred men, brought forcibly to the fore the need of hospital facilities and from that was organized All Saints Hospital.

This and other hospitals has served McAlester well and efficiently since that time. It has been thirty-five years since All Saints was organized. This hospital was taken over finally, the Masonic fraternity assuming its management and obligations in June, 1925; so the original All Saints is now owned and operated by the Albert Pike Lodge of Perfection, No. 2. The hospital is standardized according to the requirements of the American College of Surgeons, is of fire proof construction, has 55 beds, X-ray physiotherapy and clinical laboratories. The hospital maintains a training school for nurses in charge of a full time directress, accepting ladies of the ages of 18 to 35 years; graduates of accredited high schools, and otherwise fit for training. The nurses' course requires three years, which is devoted to class room and practical work. Instruction is given by the graduate nursing staff and physicians and surgeons of the hospital staff.

The superintendent is Miss Mary A. Smith; superintendent of nurses, Mrs. Margaret Hoffman; night supervisor, Miss Mattie Lyne; surgical supervisor, Miss Margaret Girard; dietitian, Miss Grace Headrick; historian, Miss Ethel Kempe; cashier, Mrs. Mattie Farmer.

The writer has more than once visited Albert Pike Hospital and can testify to the high type of all its work and activities. McAlester may be well proud of this accomplishment, which has been brought about by the energy and ability of the hospital staff.

SOME ATTRACTIONS OF THE SHAWNEE MEETING

The Shawnee meeting will offer to the medical visitor many unusual features. Among these are: Two days of clinics, with demonstrations of the proper treatment of the various commoner fractures, the type that often get the physician and surgeon into trouble.

At intervals there will be moving pictures of various medical and surgical sub-

ALBERT PIKE HOSPITAL, McALESTER

ENTRANCE AND LOBBY—HERE IS WHERE BUSINESS DETAILS OF THE HOSPITAL ARE HANDLED.

GRADUATE AND STUDENT NURSES WHO MINISTER TO THE SICK AND SUFFERING AT ALBERT PIKE HOSPITAL

jects; these have not yet been selected, but will be chosen with a view as to the most fitting to the occasion.

Among the notables present will be: Dr. Fred H. Albee, New York, one of the country's outstanding orthopedic surgeons: Dr. Jabez N. Jackson, Kansas City, ex-president of the American Medical Association, on some physiological processes of the abdomen; Dr. Frank R. Teachenor, Kansas City, on Tumors of the Spinal Cord. Dr. C. M. Rosser, Dallas, will be a guest of honor and deliver an address to the General Session. Dr. C. M. Sistrunk, Dallas, formerly of The Mayo Clinic, will probably be present.

EXTENSION SERVICE OF THE STATE UNIVERSITY

Notwithstanding that on more than one occasion heretofore, we have called attention to the splendid work of the Extention Department rendered available by the University Medical School and authorized by the State of Oklahoma, to be administered by the State University, one of our correspondents thinks once more attention should be called to it.

Very few people realize the tremendous importance of the University of Oklahoma. Extension work is available not only for physicians and the medical profession, but for practically every type of citizen. Under the urge of ethics and the demands of the cause of right and justice, the legal profession has recently been and is now undergoing a very close scrutiny, especially as to irregularities and types of misconduct formerly ignored.

The medical department of the university has already presented many unusual and more worthwhile courses to physicians in various parts of the State. These have been held principally in Oklahoma City as it is the most logical point by reason of being the headquarters of the medical school. But courses have also been held in Tulsa and Muskogee. A few months ago an editorial in this Journal strongly urged physicians of the State to consider, wherever a sufficient number could be gotten together, such courses as might be desired.

Speaking from the personal standpoint, the writer received a great deal of help at a minimum cost from a course in anatomy and cadaveric surgery, held in Muskogee, the course covering a term of nine weeks, the cost to each of the fourteen participants, $60. Certainly no one can acquire this service by going away for many times the amount involved. Instructors for this work are rather limited so physicians should begin a long time in advance to lay their plans in order to accomplish their desires.

Those taking the course in Tulsa were: Drs, Whittle, Holdenville; Ogden, Electra, Texas; Gastineau, Vinita; Miller Guthrie; Kuyrkendall, McAlester; Ruby Daniels, and Viola P. Scanland, Dallas, Texas; Rust, Pawhuska; Lipscomb, Ponca City; Haas, Sapulpa; Fullenwider, Muskogee; From Tulsa were Haralson, Gorrell, perry, Huber, Childs, Dunlap, Roth, Beyer; Brown of Ponca City. Drs. D. D. McHenry, Oklahoma City and Barker, Guthrie, had taken the course the previous week, came to Tulsa and repeated for 4 days.

ANNUAL SESSION—SHAWNEE
MAY 26-28TH

COMMITTEES
POTTAWATOMIE COUNTY MEDICAL SOCIETY

Dr. R. M. Anderson, *General Chairman*

PROGRAM:

Drs. J. M. Byrum, F. L. Carson, A. C. McFarling, and T. C. Sanders.

FINANCE:

Drs. G. S. Baxter, W. M. Gallaher and Francis P. Newlin.

BADGES:

Drs. W. M. Gallaher, C. F. Parramore and G. H. Applewhite.

ENTERTAINMENT:

Drs. T. C. Sanders, Clinton Gallaher and J. M. Stooksbury.

GOLF:

Drs. Eugene Rice and T. C. Sanders.

RESERVE OFFICERS:

Drs. T. D. Rowland, J. A. Walker and H. A. Wagner.

INDIAN SERVICE AND PUBLIC HEALTH:

Drs. Walter S. Stevens, David Gillick and J. E. Walker.

FRATERNAL DINNERS:

Drs. Clinton Gallaher, Eugene Rice and John I. Gaston.

WOMAN PHYSICIANS:

Drs. Frances P. Newlin and McAdams Williams.

WOMEN'S ENTERTAINMENT:

Mrs. J. E. Hughes, Mrs. G. S. Baxter, Mrs. Eugene Rice, Mrs. T. C. Sanders, Mrs. T. D. Rowland and Mrs. John I Gaston.

HOTELS:

Drs. J. H. Scott, John I. Gaston, M. A. Baker and H. G. Campbell.

BANQUET:

Drs. J. E. Hughes, W. C. Bradford, T. C. Sanders and Walter Stevens.

NATIONAL HOSPITAL DAY

Hospitals throughout the United States and Canada are beginning plans for the tenth observance of National Hospital Day, May 12, according to information reaching Dr. J. R. Morrow, superintendent, Bergen Pines, Oradell, N. J., chairman of the National Hospital Day Committee of the American Hospital Association.

While some institutions which have observed the day since its start are seeking new ideas, the majority of the hospitals will have "open house", reunion of babies, inspection of departments and other features which met with such success in previous years. Some of them undoubtedly have had the same experience as a hospital that decided to omit its "baby show" one year and found that the mothers, who had gathered in larger numbers than on the previous occasion, were greatly disappointed.

That more small hospitals will observe May 12th this year than in the past is the belief of some of the members of the national committee, owing to the tribute paid to small hospitals in rural sections by President Hoover in his endorsement of National Hospital Day.

Hospital councils in some cities focus all their attention at March and April meetings on plans for a joint observance of National Hospital Day. The Chicago Hospital Association is among those doing this at this time. This association, incidentally, already has been tendered time on two radio stations.

The national committee is in touch with large manufacturers and others using nation-wide radio hookups and hopes to extend the radio publicity given National Hospital Day last year. Many hospitals also are making arrangements for individual radio programs, as in the past.

Most of the hospitals conducting schools of nursing which will have a National Hospital Day program will give considerable attention to a presentation of facts about nursing education and nursing service, keeping in mind that May 12 is the anniversary of the birth of Florence Nightingale.

Editorial Notes—Personal and General

DR. DEWITT STONE, Sayre, is reported very ill at his home.

DR. J. W. BAKER, Enid, who has been ill is reported recovering.

DR. G. P. CHERRY, formerly of Granite, announces his removal to Mangum.

DR. A. J. L. MOYSE, formerly of Castle, announces his removal to Okemah, Okla.

DRS. T. J. LYNCH and J. O. LOWE, formerly of Okmulgee, announce their removal to Tulsa.

DR. C. N. TALLEY, Marlow, is spending about four weeks in Rochester, Minn., taking post-graduate work.

DR. G. Y. McKINNEY, Henryetta, and Miss Cecil Buckler, Dustin, were married at Jasper, Ark., June 15, 1929.

CHEROKEE COUNTY MEDICAL SOCIETY met January 8th, and elected the following officers: Drs. P. H. Medearis, Tahlequah, president; Swartz Baines, Tahlequah, secretary-treasurer.

ADAIR COUNTY MEDICAL SOCIETY have elected the following officers for 1930: President, Dr. E. P. Greene, Westville; vice-president, Dr. E. E. Poyner, Stilwell; secretary-treasurer, Dr. Jos. A. Patton, Stilwell.

GARVIN COUNTY MEDICAL SOCIETY met March 19th, Pauls Valley, in the office of Dr. W. P. Greening. Dr. M. S. Gregory, Oklahoma City, talked on "What is a Neurosis?" and Dr. Carl Puckett, Oklahoma City, talked on "Tuberculosis."

MUSKOGEE COUNTY MEDICAL SOCIETY met March 27th, for their regular meeting, with Dr. R. M. Shapard, Tulsa, as the speaker of the evening. His subject was "Lung Abscesses." Drs. E. Levey, F. J. Wilkiemyer and Pat Fite discussed the paper.

SEMINOLE COUNTY MEDICAL SOCIETY met March 20th, at the Chamber of Commerce, Seminole. Dr. J. M. Byrum, Shawnee, gave a lecture on "Progressive Medicine." Dr. Claude S. Chambers, Seminole, read a paper along the lines upon which Dr. Byrum spoke. About twenty physicians were present.

OKMULGEE-OKFUSKEE COUNTY MEDICAL SOCIETY met March 17th, at the First Presbyterian church, Okmulgee, for its regular meeting. Doctor Basil A. Hayes, Oklahoma City, spoke on "Common Rectal Diseases," and Doctor Henry H. Turner, Oklahoma City, on "Endocrinology in General Practice." Both papers were illustrated by lantern slides.

TULSA COUNTY MEDICAL SOCIETY met February 24th, in the assembly room, Medical Arts Building, Tulsa, for their regular meeting. Dr. Fred M. Drennan, professor of gastro-enterology at Loyola University, Chicago, Ill., presented a paper on "The Medical Management of Duodenal Ulcer, with Special References to Factors That Hinder Its Success." Drs. Peter Cope and Daniel W. White gave a dinner before the meeting at the Tulsa Club, in honor of Dr. Drennan.

DR. E. GOLDFAIN, Dr. Carroll M. Pounders and Dr. E. Margo, all of Oklahoma City, attended the meeting of the Stephens County Medical Society of Duncan, Okla., on March, 25, 1930. Doctor Goldfain read a paper upon the subject of "Neurological Aspects of Industrial Back Cases", and showed some moving pictures demonstrating various gaits and symptoms. Dr. C. W. Tedrowe of Enid, read a paper on the subject of "Gall Bladder Disturbances". Dr. V. C. Tisdal of Elk City, and Dr. Earl D. McBride of Oklahoma City, were visitors.

DR. L. H. STUART and DR. I. A. NELSON, radiologist and pathologist, respectively at St. John's Hospital, Tulsa, Okla., announce the opening of their downtown laboratories at 316 Robert's Bldg., Sixth and Main Streets. Until last November, Dr. Stuart was radiologist at Springer Clinic and has been in charge of the department of radiology at the hospital for nearly two years. Dr. Nelson, in charge of the department of pathology, will be remembered by his friends in Enid and vicinity, whence he came to assume his present duties about three years ago.

SOUTHERN OKLAHOMA MEDICAL ASSOCIATION held their regular meeting in Waurika, the following appearing on the program: Address of Welcome, Senator C. E. Storms, Waurika; Response, Dr. D. Long, Duncan; "This Sinus Thing," Dr. A. M. McMahan, Duncan; "Diagnostic Clinic," Dr. T. M. Aderhold, El Reno; "Dermatology, Today," Dr. Curtis R. Day, Oklahoma City; "Endocrinology in General Practice," Dr. Henry Turner, Oklahoma City; "Disorders of the Thymus Gland," Dr. Tom Lowrey and Dr. Hugh Jeter, of Oklahoma City; President's Address, Dr. F. A. Harrison, Ardmore.

MUSKOGEE COUNTY MEDICAL SOCIETY met February 24th, Dr. Ned Smith, neurologist and pyschiatrist, of Tulsa, delivered an address on "Psycho-Neurosis: Patients or Pests." Dr. M. O. Nelson, dermatologist, of Tulsa, delivered one on "The Significance of Serological Tests in the Diagnosis and Treatment of Syphilis."

March 11th, the Muskogee County Society heard an interesting address on "Ununited Hip Fracture," by Dr. Wade Sisler, of Tulsa. This address was illustrated by lantern slides. Dr. J. E. McDonald, orthopedist, Tulsa, demonstrated a new bunion operation. About forty men were present at each of these meetings.

AMERICAN SOCIAL HYGIENE ASSOCIATION

Regional conference of the AMERICAN SOCIAL HYGIENE ASSOCIATION, under the auspices of the Louisiana State Board of Health and the New Orleans Council of Social Agencies, at the Hotel Roosevelt, New Orleans, May 26-27. Institutes will be held on Friday and Saturday, May 23-24. Public meeting Sunday. Speakers from most of the southern and southwestern states will take part in the program, as well several representatives from the national society. The meeting should prove of great interest to physicians, public health workers, social service workers and members of parent-teachers organizations.

PRIZE FOR GOITER PAPERS

Beginning this year the American Association for the Study of Goiter will award a cash prize of $300.00 annually for the best original thesis dealing with some phase of the goiter problem. Theses should be submitted by June 1st, to Dr. Walter M. Simpson, chairman of the Essay Committee, Miami Valley Hospital, Dayton, Ohio. The award will be given immediately following the coming meeting of the Association which is to be held in Seattle, Wash., July 10-12, 1930.

DOCTOR JAMES ISSAC TAYLOR

Dr. J. I. Taylor, sixty years of age, died at his home at Ringling, March 2d, after a prolonged illness.

Dr. Taylor was born near Louisville, Ky., July 26, 1870. He attended the Fort Worth University where he received his M.D. degree, April 2, 1896. He came to Ringling in 1923, where he practiced medicine up until the time of his death.

He is survived by his wife, five children and five sisters.

Funeral services were under the auspices of the Masonic Order, with burial in the Cornish cemetery.

DOCTOR ROBERT A. LIVELY

Dr. R. A. Lively, pioneer physician of Durant, died February 20th, at his home, after a prolonged illness.

Dr. Lively was born December 25, 1848, at Holdenville, Ky, making him eighty-two years old at the time of his death. He was reared and educated in that community and was graduated with his medical degree from the College of Physicians and Surgeons at Keokuck, Iowa, in 1879. He began the practice of medicine at Campbellsville, Ky., immediately after his graduation, but moved to Savoy, Texas, in 1885. He married Miss Tommie Squires in 1890, and she with their son, Robert A. Lively, Jr., and a sister, are his sole survivors.

Dr. Lively and his wife moved to Colbert, Indian Territory in 1893, and a year later moved to Durant, where they have since made their home, Dr. Lively retiring from practice in 1907.

Funeral services were held March 22d, at the First Presbyterian church, with Rev. Wm. N. Sholl, and Dr. Ebenezer Hotchkin officiating. Burial was in Savoy, Texas.

TUBERCULOSIS

Edited By

L. J. Moorman, M.D. and Floyd Moorman, M.D.
912 Medical Arts Bldg., Oklahoma City

Phrenicoexairesis in Progressive Pulmonary Tuberculosis. Erza Bridge and Perry A. Bly. American Review of Tuberculosis, November, 1929.

Simple section of the phrenic nerve was proposed in 1911 by Stuertz for basal tuberculosis. In 1913, Schepelmaun suggested section and avulsion of the phrenic nerve in early pulmonary tuberculosis. In the same year Sauerbruch, working independently, reported results in five cases treated by this method.

The phrenic arises chiefly from the fourth cervical nerve, partly from the third and sometimes a small root from the fifth, and rarely receives a filament from the sixth.

The diaphragm is derived from the fourth cervical myotome and belongs to the cervical muscles. In the embryo it lay in the cervical region and migrated to its final position between the thorax and abdomen. Hence it is that it is supplied by the phrenic nerve which elongates as the diaphragm descends to its final position.

The operation is done under local anesthesia; incision is made about one inch above the clavicle and parallel to it just posterior to the sternocleidomastoid muscle. The nerve is exposed as it lies on the scalenus anticus, anesthetized, dissected free and severed; the distal portion is wound around forceps and given slow and intermittent traction until it gives way. It is desirable to get at least 8 cm. so that any accessory nerves will be removed.

In certain cases the nerve is crushed or injected with alcohol in order to secure temporary paralysis of the diaphragm which may last from four to five months. Later, if the progress of the case is satisfactory, radical phrenicectomy may be done.

The accessory muscles of respiration still function but the operation brings about a very important decrease in pulmonary expansion, which makes it an ideal procedure in cases having a unilateral disease, yet it should not be entirely limited to this type of case.

The authors report sixty cases with gratifying results. They observed that after operation the patients raise more sputum for a time but with less effort. The pulse rate is temporarily increased and there is little or no discomfort except for slight and transient dyspnea.

The Indications for the Surgical Treatment of Pulmonary Tuberculosis. E. J. O'Brien. American Review of Tuberculosis, November, 1929.

The various surgical procedures are as follows:

1. Crushing of phrenic nerve.
2. Exairesis of the nerve.
3. Artificial pneumothorax.
4. Artificial pneumothorax and phrenic exairesis.
5. Extrapleural pneumolysis (open and closed methods).
6. Thoracoplasty (upper stage only) without phrenic operation.
7. Thoracoplasty (upper stage only) with preliminary phrenic crushing.
8. Thoracoplasty (upper stage only) with preliminary phrenic exairesis.
9. Thoracoplasty (lower stage only).
10. Thoracoplasty (complete); upper stage first.
11. Thoracoplasty (complete); lower stage first.
12. Thoracoplasty; parasternal.
13. Extrapleural pneumolysis.
14. Thoracoplasty with traction wires.
15. Resection of intercostal nerves.

This is the sequence in which the author thinks these procedures should be placed. It is his opinion that practically every demonstrable unilateral tuberculous lesion should have some form of compression therapy and that almost none of them be left to bed-rest alone.

The age, patient's general condition and the presence of complications elsewhere in the body must be taken into consideration.

Phrenic nerve operations are done to cause paralysis of the diaphragm. He recommends simple crushing in exudative lesions with light infiltration and localized nodular forms of productive lesions without cavitation which are not active or progressive. If this same lesion be more extensive, though not more active, a phrenicectomy should be done.

In predominantly exudative lesions that are rapidly progressive and active, a greater amount of compression is needed and artificial pneumothorax should be given at once.

Tuberculous pneumonia, if seen early, should

be combatted at once with artificial pneumothorax.

When considering compression of a diseased lung and there are suspicious lesions in the contralateral lung which we wish to test out, artificial pneumothorax should always be tried first.

Patients with uncontrollable hemorrhage, even if the disease is markedly bilateral, should have compression by air, if possible, on the side from which the bleeding occurs, if this can be determined. If this cannot be done, crushing of the phrenic nerve is indicated.

If thin adhesions are present preventing sufficient collapse, frequent refills of small amounts of air often bring about the desired result, but if this fails, an attempt may be made to cut the adhesions, either by the closed method of Jacobaeus or by the open method.

Thoracoplasty is used when the more simple procedures fail. It is indicated in the process of repair after destruction has taken place and cavitation and fibrosis have resulted. The age of the patient, chronic nephritis and heart complications most frequently decide us against radical surgical procedures. Intestinal and laryngeal tuberculosis should not discourage compression as a rule, but rather encourage it, for they often clear up after compression of the diseased lung.

In those patients in whom thoracoplasty seems too severe because of age or other complications, phrenicectomy and resection of the intercostal nerves, will often be of value. Alexander has reported favorable results from this procedure.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D
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A Case of Achondroplasia of Hypoplastic Type. A. Loffredo. Pediatria, XXXVI, 481, May, 1928.

The case is one of a new-born achondroplastic, dead on the twenty-second day from sepsis due to calcaneal ulcerations. The case appears interesting on account of the histological alterations found in the hypophysis, the thyroid, the parathyroid and pancreas, alteration of a sclerotic type which, combined with clinical data (enlarged liver), cause one to believe the patient a subject of hereditary syphilis.

For the etio-pathogenic interpretation of the achondroplasia, the author refers to Giume and Graziano, while he hesitates to accept the theory of Murk Jansen, holding that often during embryonal development, although there is an increase of amniotic fluid in the uterine cavity, nevertheless achondroplasia and other malformations are not produced and besides, such an increased volume of amniotic fluid would not explain the enchondral aplasia present in the deformities described. The histopathological report of the case in question, showing evidence of a pluriglandular dysfunction, tends to clarify the pathogenesis of the achondroplastic, suggesting it not as the sole factor but as the most frequent one.

Osteochondritis Dissecans. Milton J. Geyman. Radiology, XI, 315, October, 1928.

The lesion consists in the segregation of a portion of cartilagenous and subchondral tissue into the joint space. The most common sites are the external condyle of the humerus, and the lateral portion of the mesial condyle of the femur; occasionally the patella. It occurs chiefly in young adult and adolescent males. Trauma is considered the cause by some, a subchondral infectious process by others. The peculiar contours of the bone at the sites of most frequent occurrence, constitutional disease, and heredity, are possible etiologic factors.

In the radiogram is seen an area of subchondral rarefaction; the separated fragment may contain no osseus tissue and may not appear in the X-ray unless separated long enough for secondary calcification and ossification to have taken place. At the site of separation, proliferative changes take place, mainly the formation of fibrocartilage, but at times the laying down of new bone. The separated fragment is nourished by the synovial fluid and slowly increases in size.

Four cases are described, the sites being the patella, the lateral condyle of the femur, the head of the femur, and the external condyle of the humerus.

In all these cases there was a definite history of trauma and the author concludes that all the process is usually on a definitely traumatic basis. Any part of the knee or elbow joint, and rarely the hip, may be the source of this type of loose body.

A Case of Paget's Disease. D. Costantini. Radiol. Med., XIV, 1105, December, 1927.

Description of a case of Paget's disease in which the roentgenological examination revealed very different bone lesions in the various skeletal segments. The differential diagnosis (chronic infectious osteomyelitis, osseous tuberculosis, osseous syphilis, osteitis fibrosa of Recklinghausen, osseous leontiasis of Virchow) would have presented many difficulties if there had not been other factors, such as the clinical course, the thickening of the bone accompanied by irregularities and characteristic deformities, and the biopsy report, from which it was possible to show two very distinct processes, the one of productive osteitis and the other of destructive osteitis. The roentgenological picture had typical characteristics of Paget's disease in a single skeletal segment (tibia), while the lesions of the radius would suggest the question of osteitis fibrosa of the type of Recklinghausen; the cranium presented lesions only in the frontal bone. The author concludes that the roentgenological examination of the osseous system presents great difficulties inasmuch as bone diseases of unknown origin, osteitis deformans of Paget, osteitis fibrosa of Recklinghausen, osseous leontiasis of Virchow, may produce in the skeleton alterations of form, of site, and of distribution which are very variable.

DERMATOLOGY, X-RAY AND RADIUM THERAPY

Edited by C. P. Bondurant, M.D.
413 Medical Arts Building, Oklahoma City

Boeck's Sarcoid—Report of a Case with Visceral Involvement. Mitchell Bernstein, Frank Konzlemann and D. M. Sidlick. Arch. Int. Med. 44:7 (Nov.) 1929.

The author writes of a case of Boeck's sarcoid with visceral involvement. A postmortem examination revealed lesions similar to the skin lesions in the epicardium, bronchial mucosa and mucosa of the ileum. To support the author's belief that Boeck's sarcoid is a chronic infectious granuloma that may be caused by syphilis as well as by tuberculosis, the Wassermann reaction of both the blood and the pleural fluid was strongly positive. The patient had severe dyspnea, which is not common in tuberculosis of the lung, but is a prominent symptom in syphilis of the lung. A negative reaction for tubercle bacilli was the result of many examinations of the sputum. The pleural fluid of the patient inoculated into guinea pigs gave a negative reaction and a section revealed areas of perivascular and perineural mononuclear infiltration and independent collections of mononuclear cells in the liver and elsewhere.

Our attention is called to the fact that most studies of the etiology of Boeck's sarcoid are concerned with the presence of an accompanying tuberculosis, so the presence of systemic lesions are many times overlooked. Infiltration of the lungs, beginning at the roots and spreading toward the bases or upward and associated with clear apexes is not common in tuberculosis, but is consistent with syphilis, and the authors feel that when patchy, discrete infiltrations of the lungs are associated with Boeck's sarcoid, they are sarcoid lesions. Another patient with sarcoid lesions was observed; the history and the Wassermann reaction on the blood suggested syphilis, but the results of the examination of the chest suggested chronic tuberculosis. The authors were unable to isolate tubercle bacilli from the sputum.

Industrial Dermatoses; Their Causation, Recognition, Prevention and Treatment. S. Overton, Brit. J. Dermat. 41:255 (July) 1929.

Overton, in discussing industrial dermatoses, comments on the fact that returns from the Workman's Compensation Act for 1927 show that for factories more certificates of disablement were issued for skin conditions than for any other condition requiring compensation. The author states that there is an increasing number of claims due to industrial dermatitis, contracted by the worker in his employment. Industrial dermatitis is caused by a number of irritants, which are of animal, vegetable and mineral origin. For the last three years, alkalis have held first place in the reports of the chief inspector of factories. Paraffin, petrol and naphtha, sugar dyes, particularly sulphur and basic, and "accelerators" that were used to expedite the vulcanizing of rubber were found to be among the important causes of industrial dermatitis; they are decreasing agents. Those who were more subjected to this dermatitis were engineers, bakers and flour confectionery workers, platers, dyes and calico printers, in the order named. It is stated that the author, as a result of practical experience has found the following suggestions to be of value in the prevention of industrial dermatoses: (1) The use of emollients before and after work; (2) complete removal of the irritants encountered at work, by harmless methods, several times per shift; (3) inspection of hands and arms by experienced observers to enforce (a) early treatment of minor injuries, cuts and burns, (b) scrupulous cleanliness of hands, arms and overalls, (c) removal from irritants and prompt treatment in early cases.

Overton stresses the importance of recognizing that a dermatoses is of industrial origin, and that certain irritants produce localized lesions, besides causing a dermatitis, such as chrome and alkalis. The site of the dermatitis and knowledge of the irritants in apparently innocuous occupations are among the subjects also briefly discussed.

Industrial Dermatoses—Their Causation, Recognition, Prevention and Treatment. W. Dyson, Brit. J. Dermat. 41:264 (July) 1929.

The author writes of the discussion, by Dyson, of the cases of dermatitis which cannot be distinguished from cases of dermatitis commonly known as eczema. Such cases, commonly seen in bleachers, dye workers, chemical workers, plasterers, rubber workers, french polishers and hair dressers, are not recognized by Dyson as different from eczema. They are eczematous occupational dermatitis, and any condition predisposing to eczema will predispose to occupational dermatitis. Hyperhydrosis is a common factor in its production and xerodermatous and ichthyotic subjects are more susceptible than others. Idiosyncrasy is not mentioned. On the subject of sensitization, the author states that prolonged or repeated attacks of dermatitis may produce a general sensitization which has many of the characters of an "anaphylactic state." Seborrhea and secondary pyogenic infection, in his experience favor the development of a general sensitization, although it may develop without the presence of any of these factors.

Reference is made to McGlasson's work on blood sugar content in dermatitis. With this idea in mind, Dyson examined fifty patients with all types of eczema and eczematous occupational dermatitis, and found that when pururitus was intense and there was no discharge, the average blood sugar content was high, but when the inflamed surface was discharging, the average blood sugar content was less. It was suggested that these results might be due to the liberation of histamine from the epithelium, which causes a liberation of glycogen from the liver by stimulating the secretion of epinephrine, and experiments are cited in which injections of histamine were given to raise the blood sugar content, with negative results. To determine whether an anti-anaphylactic state could be established and the patient gradually desensitized, small repeated doses of toxin, producing the anaphylactic state, were given. An injection of one cubic centimeter of either blood serum or whole blood was injected

at weekly intervals in seventeen cases. In ten of the cases, the patients made steady progress toward recovery; in most cases, the itching ceased after one or two injections. In one case the condition had cleared up after the patient had received eleven injections, but he had a relapse within seven weeks following, and showed no improvement on subsequent injections. In ten cases the patients made steady progress toward recovery; four other patients showed no response to treatment; and in two cases the injections were discontinued.

Blastomycosis. M. Sydney Thompson, Proc. Soc. Med. 22:1535 (Oct.) 1929.

The author states that a patient had not suffered from skin troubles previous to an examination for a dental abscess in the lower part of the right side of the jaw. The abscess burst through the skin, followed by a swelling below the left eye. The later lesion gradually softened and decreased in size until about eighteen months before examination, when a sinus appeared on the left side of the neck. Then a small "pimple" appeared on the left side of the nose which remained in spite of all forms of treatment. When the patient was first seen, the submandibular gland was swollen and inflamed. There was an ulcer below the left lower lid, heavily crusted over, the edge of which was clearly defined. When the scab was removed it was an eighth of an inch in width and made up of closely packed papillomatous processes. A great amount of pus was extruded from the center of the ulcer, which left a large hole. There were many little scabs scattered over the face, underneath tiny papillomas and a pus area. Scabs, pus, and papillomas completely occluded the left nostril, and both of the nares were thus affected, causing the whole nose to be greatly swollen and covered with heavy crusts. Five days after the administration of potassium iodide, and the dose gradually increased, there was definite improvement, as the papillomatous processes were flatter and less distinct, and the patient herself volunteered the statement that she could breath through the left nostril for the first time in two months.

Von Recklinghausen's Disease. A. M. H. Gray. Proc. Roy. Soc. Med. 22:1536 (Oct.) 1929.

The author states that a boy who had apparently had an eruption since he was a baby, for almost fifteen years, showed a nerve envolvement. There were many neurofibromas; the median and ulnar nerves on both sides were greatly enlarged and noded all the way down. The median nerve could be traced to the wrist, and the ulnar nerve almost as well. The boy, however, had no symptoms and no pain unless the nerves were definitely pressed. He had the three classic features of the disease: molluscous tumors (not large), neurofibromas on the nerve-trunks and patches of pigmentation on the trunk, neck, and back. No history of any similar condition in his family could be traced. The boy's mental condition was normal.

Acquired Epidermolysis Bullosa (?) G. B. Dowling, Proc. Roy. Soc. Med. 22:1536 (Oct.) 1929.

The case of an 18 year old boy, who, three years ago, had blisters develop about his ankles, is a very interesting one. They later appeared on other parts of the body. Each lesion began as a small bulba, that enlarged, broke down and frequently became secondarily infected and ulcerated. The lesions healed and left scars which were chiefly about the knees, ankles, extensor aspects of the legs, hands, extensor aspects of the arms and forearms, elbows, buttocks, and there were a few on the ears, the author writes. The thighs, abdomen, and back were free. There was no family history of epidermolysis bullosa. The patient was healthy in other respects. Since the case was shown, the question of artefact was tested. A soft zinc paste was applied to the legs for two successive weeks; after the first week, several fresh bullae were found beneath the dressing. The observation was repeated with the same result. It was noted that the dressing had not been tampered with in any way.

BOOK REVIEWS

Surgical Clinics of North America (Mayo Clinic Number—Feb., 1930). Volume 10, No. 1. 174 pages with 82 illustrations. Paper $12.00 per clinic year. Cloth $16.00 per clinic year. (Issued serially, one number every other month.)

The following is a list of the contributions of this issue:

"Ureteral Transplantation for Exstrophy of the Bladder" by Charles H. Mayo and Claude F. Dixon.

"Vesicosigmoidal Fistula; Gastro-Intestinal Hemorrhage in a Case of Appendicitis and in a Case of Chronic Cholecystitis with Cholelithiasis; Excision of Gastric Ulcer and Posterior Gastro-Enterostomy; Lesions of the Kidneys" by E. Starr Judd, James M. Marshall, and Shattuck W. Hartwell.

"Unusual Tumors of the Gastro-Intestinal Tract" by Donald C. Balfour and Archibald H. McIndoe.

"Intracapsular Fracture of the Hip; Subacute Osteomyelitis and Endothelioma of the Lower End of the Femur; Slipping Epiphysis of Head of Left Femur; Reconstruction Shelf Operation for Congenital Dislocation of the Left Hip; Old Traumatic Dislocation of the Left Hip" by Melvin S. Henderson.

"Volkmann's Ischemic Contracture; Bilateral Congenital Dislocation of the Hips; Irreducible Fracture of the Malleoli of the Ankle Treated by Open Reduction and Beef-Bone Screws; Bone Grafting for Delayed Unison Following Osteotomy and the Use of a Lane Plate; Tuberculosis of the Hip Complicated by Pulmonary Tuberculosis, Treated by Osteotomy and Arthrodesis" by Henry W. Meyerding.

"Pseudomyxoma Peritoneal of Ovarian Origin; An Analysis of Thirty Cases" by James C. Masson and Robert A. Hamrick.

"Multiple Spontaneous Arterial Aneurysm" by James C. Masson and Harold D. Caylor.

"Bilateral Sigmoid Sinus Phlebitis as a Cause of General Sepsis."

"Acute Fulminating Septicemia Associated with Otitis."

"Spontaneous Bleeding from a Non-malignant Faucial Tonsil."

"Delayed Pulmonary Infarct Following Injury to Sigmoid Sinus During Radical Mastoid Operation."

"Effect of Application of Radium in Hyperplastic Frontal Sinusitis". Cases from the Clinic of Harold I. Lillie, assisted by Henry L. Williams, Jr.

"Scarring and Ulceration of the Neck after Irradiation; Reconstruction of the Upper Lip and Cheek; Recurring Cyst of the Floor of the Mouth; Keloid of the Neck: Osteomyelitis of the Jaw; Fibrosarcoma of the Hypopharynx" by Gordon B. New.

"Multiple Pigmented Papillary Nevi of the Face; Pigmented Mole of the Face; Recurring Epithelioma of the Face; Inflammatory Epulis; Fibro-Osteochondroma of the Mandible" by Frederick A. Figi.

"Cardiovascular Reflexes" by J. Markowitz and Frank C. Mann.

"Keratoma: A Lesion Often Mistaken for Sebaceous Cyst" by Albert C. Broders and Elizabeth Wilson.

"The Immediate Response Observed in the Treatment of Cases of Carcinoma of the Cervix Uteri with Radium" by Harry H. Bowing.

"Unusual Tumors of the Spinal Cord" by Winchell McK. Craig.

"Perforation of the Duodenum; Chronic Interstitial Cystitis and Chronic Granular Urethritis; Subacute Appendicitis and Hyperthyroidism" by Claude F. Dixon.

"Complications of Dermoid Cysts of the Ovary; Chemical Hysterectomy" by Virgil S. Counseller.

"A Study of the Vessels of the Extremities by the Injection of Mercury" by Bayard T. Horton.

"Postoperative Treatment of Abdominal Actinomycosis" by Frederick L. Smith.

Diseases of the Blood by Paul W Clough, M.D., Associate in Clinical Medicine John Hopkin's University. Embossed cloth. Two pages of illustrations in color. 310 pages. Price $2.50. Harper & Brothers, Publishers, New York, 1929.

This is an entertaining little work of twenty-two chapters on various phenomena connected with the blood, its diseases and dyscrasias, various types of anemias, hemolytic jaundice, splenic anemia, polycythemia, the leucemias, hemorrhagic diseases and transfusions are the outstanding chapters.

As has been pointed out before, these monographs being issued by the House of Harper should find a place in the library of every busy physician.

Surgical Diagnosis. By 42 American Authors. Edited by Evarts A. Graham, M.D., Professor of Surgery, Washington University Medical School. Three Octavo volumes, totaling 2750 pages, containing 1250 illustrations, and Separate Index Volume. Philadelphia and London: W. B. Saunders Company, 1930. Cloth, $35.00 a set. Volumes I and II are now ready. Volume III and separate index volume ready March 15, 1930.

The editor of this work on Surgical Diagnosis, it will be remembered, perfected, in conjunction with Cole, gall-bladder visualization, a process which it will be recalled has been of a great deal of aid to internists and surgeons in diagnosing the more obscure forms of gall-bladder disease. He has succeeded in bringing together the opinions of 41 other surgeons, laboratory experts, orthopedists and research workers, to make this a most formidable work on the diagnosis of surgical conditions. Space does not permit acknowledgement of the many well-known authors and contributors to the work, but among them are to be noted: Adson, Blair, Cole, Cofher, Dandy, Hertzler, J. Shelton and John S. Horsley, Edward P. Richardson, Kanavel, Neuhof, as well as other brilliant surgical writers of the country.

The discussion of the fundamentals of the wounds, infections and post-operative complications alone take up 208 pages. The work is finely illustrated, some in color. It should be in the hands of every surgeon and student of surgery.

Diseases of the Chest and the Principles of Physical Diagnosis (Fourth Edition), by George W. Norris, M.D., Professor of Clinical Medicine in the University of Pennsylvania, and Henry R. M. Landis, M. D., Professor of Clinical Medicine, University of Pennsylvania; Director of the Clinical and Sociological Departments of the Henry Phipps Institute of the University of Pennsylvania, with a chapter on the Transmission of Sounds Through the Chest, by Charles M. Montgomery, M.D., and a chapter on the Electrocardiograph in Heart Disease, by Edward Krumbhaar, Ph.D., M.D. Fourth Edition, Revised. 954 pages with 478 illustrations. Philadelphia and London: W. B. Saunders Company, 1929. Cloth $10.00 net.

This work by Norris and Landis is now in its fourth revision in addition to having been reprinted upon three occasions. This speaks for its popularity and usefullness to the medical profession. The new edition contains a brief account on the part the bronchoscope plays in the diagnosis of respiratory affections. The authors, in their preface, suggest that it will be well for clinicians to remember that the laboratory should be their partner and not their master.

The work is finely illustrated, the text following closely the illustrations. Diseases of the lungs, the pericardium, myo and endocardium are given much attention.

RELATION OF THE ALTITUDE OF SUN TO ITS ANTIRACHITIC EFFECT

Frederick F. Tisdall and Allan Brown, Toronto (Journal A. M. A., March 16, 1929), in reporting the relation of the altitude of the sun to its antirachitic effect conclude that a marked increase occurs in the antirachitic effect of sun-

shine when the sun reaches an altitude of 35 degrees or more. A study of the geographic distribution of rickets shows that rickets is uncommon or exists chiefly in a mild form in those places where the minimum seasonal altitude of the sun is not below about 35 degrees. Conversley, severe rickets is chiefly encountered in those cities where the altitude of the sun is below 35 degrees for some months of the year. The period of the year during which rickets will probably develop can be calculated for any city in the world. The duration of this period may be altered, however, by the prevention of exposure of patients to highly effective sunshine on account of inclement Spring weather or other factors.

STUDIES IN ASTHMA

In making a study of the relation of eczema to allergy, Edward S. O'Keefe and Francis M. Rackemann, Boston (Journal A. M. A., March 16, 1929), conclude that eczema in children begins before the end of the second year in 95 percent of the cases and is slightly more common in boys (58.6 percent) than in girls. In adults, the onset varies from infancy to 60 years of age and is very much more common in women (69.4 percent) than in men. In children, skin tests were positive in 52 percent. The highest percentage of positive tests is found during the second six months. In adults, only 38 percent gave positive skin reactions. In the children, egg, wheat and milk caused positive reactions in all but twelve of the 125 test-positive cases, and, when these foods were eliminated from the diet, improvement occurred in 83 percent; moreover, when the same foods were removed empirically from the diet of the ninety-two test-negative patients, the eczema was improved in 38 percent. Among the test-positive adults, foods caused a positive reaction in only three. Breast feeding among the infants does not have any bearing on the duration of the disease or on the results of treatment. A positive family history of allergy was found in 28 percent of the children and in 37 percent of the adults, which compares with the figure of 42 percent in asthma. Extrinsic causes have been identified in 70 percent of the children but in only 31 percent of the adults, which compares with 40 percent of extrinsic causes in asthma. Among the children a "cure" of eczema has occurred in 36 percent, but in the adult group, of the sixty-five patients followed the percentage is only 18, which, however, compares with 20 percent of "cures" in asthma. In eczema, as in asthma, the data suggest that eczema can disappear spontaneously when the hygienic background is good and ordinary irritating causes are eliminated.

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WHERE IS CEREBROSPINAL FLUID ABSORBED?

That the exit for cerebrospinal fluid is not through the pacchionian granulations (or through Weed's arachnoidal villi) can be conclusively demonstrated by the simple experiment of separating both cerebral hemispheres of dogs from all attachments to the longitudinal, transverse and circular sinuses, asserts Walter E. Dandy, Baltimore (Journal A. M. A., June 15, 1929). It then becomes impossible for any arachnoid diverticula of either gross or microscopic size to maintain direct connection between the subarachnoid space and the great venous sinuses. As a matter of fact, in young dogs in which the operation is performed there is usually—aside from venous connections—only one small area on each side suggesting a pacchionian granulation and forming an attachment between the extensive subarachnoid space and the longitudinal and transverse sinuses of each side. This small attachment is fairly constant in position and lies in the anterior fourth of the longitudinal sinus. The experiment is not difficult to perform, and when the four animals in which it was undertaken were killed four, five and six months later, in not one was there the slightest increase in the size of the cerebral ventricles or in the size of the extra cerebral subarachnoid space. These results prove that it is impossible for cerebrospinal fluid to pass directly into the large venous spaces through a medium of any type. Three other dogs were operated on in precisely the same manner. The survival periods were four, five and six months. Exactly the same negative results were present in each instance. The separation of the hemispheres from the venous sinuses was little more than a gesture because, except for a large anterior cerebral vein and a single fibrous attachment just anterior to it, the cerebral hemispheres were nowhere attached to any of the three large sinuses. The brain fell away on the slightest pressure of the spatula. With the entirely negative effects on the cerebrospinal fluid and its spaces, the claim that such structures are absorbing agents for cerebrospinal fluid becomes untenable. That pacchionian granulations do not absorb cerebrospinal fluid has been shown by the absorption of various dyes in solution—indigo carmine, methylene blue (methylthionine chloride-U. S. P.) and phenosulphonphthalein. When these dyes are injected into the spinal canal they can be detected in the blood stream in less than two minutes. On the other hand, it takes practically an hour for the dyes to reach that part of the subarachnoid spaces where the pacchionian granulations are presumed to exist. How, then, and where does cerebrospinal fluid absorb? The fluid passes into the capillaries which abound in all the radicles of the subarachnoid space. The cerebrospinal fluid is in contact with the capillaries of the pia-arachnoid. As a matter of fact there are few places in the body where fluids will not rapidly absorb into the blood. The curve of subarachnoid absorption is not greatly dissimilar from that of the peritoneal, pleural cavities, the muscle or the subcutaneous tissue, and in none of these cavities is it necessary to call on specialized structures to explain the absorption of fluid.

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